

BURMA GAZETTEER

RUBY MINES DISTRICT

VOLUME A

COMPILED BY
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BURMA GAZETTEER

THE RUBY MINES DISTRICT.

CHAPTER I.

PHYSICAL DESCRIPTION.

The Ruby Mines District as at present constituted forms a large capital L, of which the upright arm lies along the east bank of the Irrawaddy from $24^{\circ} 1'$ north down to $22^{\circ} 44'$ north, and the horizontal arm runs eastward from the Irrawaddy from about $95^{\circ} 58'$ east as far as $96^{\circ} 46'$ east and lies between north latitude $22^{\circ} 43'$ north and $23^{\circ} 2'$ north. The area of the District proper is estimated at 1,916 square miles. Within the angle formed by this L lies the State of Möng Mit (Momeik) which, from 2nd February 1892 up to 31st March 1906, was administered as an ordinary subdivision of the district, but which since the latter date has been administered as a separate Shan State under the Möng Mit Administration Order, 1906, with a Chief of its own.

The Ruby Mines District forms a part of the Mandalay Division of Upper Burma. On the north it is bounded by the Katha District; on the east, that is to say, ^sall along the inner portion of the re-entrant angle of the L, by the Momeik State; on the south by the Shan State of Hsipaw and further west by the Mandalay District, and on the west by the districts of Shwebo and Katha. With the exception of a thin strip of land extending from the mouth of the Zin *chaung* at about $23^{\circ} 9'$ north up to the Ne-gya *chaung* at $23^{\circ} 37'$ north, with an average breadth of about 2 miles, half way down the west border of the district, the whole area lies east of the Irrawaddy. The reason of the apparently anomalous inclusion of this small strip of land west of the Irrawaddy will be explained below in the history of the formation of the present district out of a series of separate Burmese jurisdictions.

Starting from the north-east corner, which is formed by the junction of the Shweli river with the Irrawaddy at approximately $23^{\circ} 48'$ north, the district boundary ascends

Ruby Mines District.

the course of the Shweli, dividing the Tagaung Township of the Ruby Mines District from Katha, until it reaches the northernmost bend of the Shweli at $24^{\circ} 1'$ north, where the tri-junction of Momeik State and the districts of Ruby Mines and Katha is located; thence, ascending the course of the Shweli as it runs almost due south, the boundary follows that river to the Laungdaw U Pagoda at $23^{\circ} 43'$ north, dividing the Tagaung Township from Momeik State. From Laungdaw U Pagoda the boundary runs inland passing through the southern end of the Kyauktaung reserve, and thence, following the boundary between the Hintha reserve on the west and Ôndok reserve on the east, it runs up to Thalin *taung* at $23^{\circ} 33' 45''$; thence the boundary cuts across the southern portion of the Ôndok reserve in an irregular line through jungle cutting across the Salin or Tadaunggwe *chaung* to Kyaukpôn *taung* at $23^{\circ} 30'$ north, and bends southward down the Kyaukpôn *taung* ridge to meet the Ôndok reserve south boundary near forest pillar No. 39; thence it follows the south boundary of the Ôndok reserve up to forest pillar No. 8 at the source of the south branch of the Tadaunggwe *chaung*; thence it passes south along the watershed between the system of streams such as the Nathlaing, Yingyan, Tongan and Nanpan *chaungs* on the east which flow westwards into the Shweli and the system of streams such as the Tauktakugyi, Thannada and Taung-ya-gyi *chaungs* on the west which flow into the Irrawaddy, following this watershed continuously southwards until the summit of the very conspicuous peak known as Shwe-u-daung Δ 6223 on sheet No. 238, Burma Survey, is reached at about $23^{\circ} 2'$ north. Along this section the boundary line has been dividing the State of Momeik from the Thabeitkyin Township of the Ruby Mines District. At Shwe-u-daung or Bodaw-gyi the boundary takes a sudden bend to the east dividing the State of Momeik from the Môgok Subdivision. The line runs eastwards along the Shwe-u-daung ridge which divides the basin of the Ôndan *chaung* on the south from the basins of the Tonka and Nansit *chaungs* on the north, all of them being feeders of the Kin stream, passing through the peaks known as Hnitmadaw-gyi Δ 5528 to the hill marked Δ 4395 on Burma Survey sheet No. 238; thence the line runs down the ridge known as the Aw-yaw-lamaung, forming the south watershed of the Thè-Byu *chaung*, to the termination of the said ridge on the left bank of the Kin *chaung* at the junction of the Thè-Byu *chaung* with the Kin *chaung*; thence down the Kin *chaung* to the mouth of the Mi-In *chaung*.

and eastwards up the Mi In *chaung* to the point where the Shwenyaungbin *chaung* and the Nam-mi-an join to form the Mi-In *chaung*; thence along the top of the ridge lying between the last mentioned two streams to Loipek or Htin-Yu-Taung Δ5606; thence along the top of the ridge forming the south watershed of the Ônma, Hwe Kam, and the Kyauktaing *chaungs* to the hill known as Loilam (or Kyauktwin) south of Manpein village; thence down a dry water-course known as the Chauk-pya *chaung* to its junction with the Thapan *chaung*, and down the Thapan *chaung* to its junction with the Kywetnapa or Yetagun *chaung*; thence a straight line to the point where the road from Kywetnapa to Maingnwe cuts the Datpôk *chaung*; thence up the Thitsidaung ridge to Kyauk *taung*; thence a straight line to Kônnyo *taung*; thence a straight line to Tampara *taung*; thence along the Lôn-Niu ridge via Kyaukwa-Manset *taung* to where it runs down to the Namlôn (or Chaunggyi *chaung*) at the place called Kyaukpya; thence descending the Namlôn or Chaunggyi *chaung* to the point where the Gwe-maw or Nam-i *chaung* flows into it; thence a straight line to the hillock known as Konsan; thence up the ridge to a demarcation post fixed just south of the burial ground of Upper Nami village; thence to the rocky place known as Kyauk-hta-yan on the Mak-hin-po-nyi or Kyauk Maung-Hnit-Ma *chaung*; thence a straight line to the Sin *taung* or Elephant Hill; thence a straight line to the junction of the Chein *chaung* with that source of the Gwe-Maw *chaung* known as the Hwe Vai; thence up the Hwe Vai *chaung* to its source at Htin-Yu *taung* near the old site of Pantara village; thence a straight line across the H'in-Yu *taung* ridge to the source of the Nam-po or Yi Po *chaung* on the opposite (east) side of the Tin-Yu *taung* ridge and down the Nam-po *chaung* to its junction with the Nam-Si-An or Pôn-Si An *chaung* and down the latter *chaung* to its junction with the Nampe *chaung*.

The south boundary starts from the junction of the Nam-Si-An *chaung* with the Nampe *chaung* and descends along the course of the Nampe, which divides the Mogôk Subdivision of the district from the Mönglôn jurisdiction of Hsipaw State, as far west as the point 22° 45' north and 96° 15' east at the junction of the Letkat *chaung* with the Nampe *chaung*, which forms the tri-junction of the jurisdictions of Hsipaw State, Mandalay District, and the Ruby Mines District. From this point the boundary runs north-west round the north watershed of the Lapet *chuung* which is an affluent of the Letkat, itself a feeder of the Nampe, up to

Ruby Mines District.

the peak marked Δ 3230 on the east boundary of the Chaunggyi Forest Reserve; thence the district boundary follows southwards round the east and south boundaries of the said forest reserve abutting on the Mandalay District up to the point where the Chaunggyi *chaung* enters the Irrawaddy about eight miles south of Thabeitkyin, at which point the three jurisdictions of the Ruby Mines, Mandalay, and Shwebo Districts meet.

The west boundary of the district runs from this point northwards up the main channel of the Irrawaddy, which divides it from the Shwebo District, to the mouth of the Zin *chaung* which enters the Irrawaddy from the west at $23^{\circ} 9'$ north. From this point the boundary runs in a straight line to the southern extremity of the crest of the Minwun range of hills immediately north of the Zin stream in the neighbourhood of its mouth; thence this crest to the source of the Nekya stream which is followed to its mouth in the Irrawaddy. From this point the district boundary continues up the main channel of the Irrawaddy till the mouth of the Shweli is reached abutting on the Katha District.*

General description.

The District proper consists of two tracts essentially different in character and configuration. The riverine tract, which forms the Thabeitkyin Subdivision with the townships of Tagaung on the north and Thabeitkyin on the south, is a long comparatively narrow strip of land running north and south bordering the Irrawaddy, and extending back roughly to an average width of about 15 miles, lying west of the watershed between the Shweli and the Irrawaddy. This may be considered the upright portion of the L, while its south arm is formed by the mass of rugged hills stretching eastwards from opposite Thabeitkyin on the river towards the Bernardmyo plateau and culminating in the conspicuous peak of Taungine Δ 7544, though there are other conspicuous hills such as Loi-Chau Δ 7008 and Shwe-U-daung Δ 6223 which also attract attention. The Irrawaddy washes the western boundary of the district from north to south. In the upper part of its course where it first enters the district it is comparatively broad and dotted with islands, while the lower part lies confined between rocky banks which gradually become steeper and converge towards and below the south boundary of the district to form what is known as the first defile. In the northern part of the Tagaung Township, enclosed between the north

*(General Department Notification No. 124, dated the 29th April 1909.)

bend of the Shweli and the Irrawaddy, there is a triangle of almost flat and tolerably arid country which seems to favour the growth of the *in* tree. The base of the triangle lies along the north edge of the foot-hills which form the north watershed of the Maing-daing tract and culminate at Tagaung *taung* Δ 2515. The triangle itself consists of undulating country which in parts, especially in the southern portion, is waterlogged in the rains, but almost completely dries up in the hot weather and where drinkable water is scarce and which without any well-defined natural features is for the most part absolutely uninhabited except along its edges and traversed by few routes. Along its two northern sides the triangle ends with a well-defined abrupt transition from the *indaing* growth on arid soil to a depressed shelf of annually inundated country, chiefly covered with *kaing* grass and extensively pitted with hollows, some of them, such as the Indaung In-ma and the Yaukthwasauung In-Ma, of considerable area and depth. Along the Shweli this submerged area is somewhat narrow and the *ins* or hollows are comparatively unimportant. But from the Shweli mouth southwards the inundated area broadens out to a stretch in some places of about two miles between the river and the rising *indaing* tract, which is the seat of the extensive and hereafter probably increasingly valuable fisheries of the Tagaung Township. This submerged shelf is some feet under water for weeks at a time and the majority of the villages, as might be expected, are found along the banks of the Irrawaddy, and until of late years the inhabitants were practically confined to the industries of fishing and timber extraction, with the result that a very wasteful denudation of the forest areas easily accessible from the river took place, chiefly in order to supply the Mandalay market with the less valuable kinds of wood. Latterly, however, the formation of extensive forest reserves and a closer supervision of extraction has restricted the opportunities of the timber cutters and the people are now beginning to exploit what no doubt, from the agricultural point of view, is a particularly favourable area for the growth of *mayin* paddy, were it not that it is exposed to abnormal and capricious rises of the Irrawaddy. These characteristics rule as far south, roughly, as the south boundary of the Tagaung Township. Inland, and almost due east of Tagaung, there is a separate landlocked hollow known as the Maing-daing tract, lying at a slightly higher elevation than the strictly riverine portion, and difficult of access from any direction except along the line of the Kyauk-O *chaung* which enters

the Irrawaddy at Tagaung. This area is entirely distinct from the riverine tract and at one time is said to have been extremely flourishing and populous and to have supplied a considerable part of the paddy required for consumption in Mandalay. It is now practically uninhabited and at present of no economic importance, all the hilly country surrounding the basin of the tract having already been taken up for the formation of forest reserves. The northern part of the Thabeitkyin township, which forms the prolongation of the riverine part of the district southwards, conforms in general characteristics to that of the Tagaung Township, except that, as the general level of the country on the eastern bank of the Irrawaddy gradually rises, this area is not subject to inundation by that river to any appreciable extent, but being fairly flat and open is devoted to a much larger extent than any other portion of the district to agriculture and especially to the cultivation of paddy. But the amount of cultivation is not extensive, as the country is cut up by a succession of small torrents dry during the hot weather, but which come down in spate in the rains and constantly destroy the fields which with great difficulty the villagers have constructed on either bank. By the time one gets as far south as Sabenago, opposite Malè in the Shwebo District, the southern limit of cultivation may be said to have been reached. The first defile may be said to start from this point, and from here southwards we meet the western termination of that long backbone of hills which forms the Mogök Subdivision proper and includes the south portion of the Momeik State. Between Sabenago and the south of the district the villages are few in number and insignificant in size, and are situated mainly in infrequent hollows in the foot-hills where, with trouble and care, the inhabitants have been able to carve out a few fields to provide a meagre sustenance for the resident population. The only place of note is Thabeitkyin, which is formed by an aggregation of four villages and owes its importance entirely to the fact that it is the port for the Ruby Mines Tract, being the point at which the Tonga road from Mogök, 60 miles away, meets the Irrawaddy.

Rivers.

From what has been said above, it will be observed that, with the exception of the two great rivers which skirt the district, the waterways are of inconsiderable length and little importance. With the exception of the Irrawaddy and the Shweli none of them are navigable. The Shweli is navigable for small launches as far as Mabeiu and, in high water, Myitsôn.

The most considerable of the streams that actually lie

within or cut across the district is the Kin *chaung* which, rising almost on the south edge of the district near the village of Yewé, passes north across the Mogôk Subdivision, crossing the Tonga road at mile 37, and thereafter cuts its way through a narrow and rocky gorge into the Momeik plain near Sagadaung whence, swollen by the junction of other streams that drain Momeik State, it flows into the Shweli near Myitsôn. The Nampe or Mabye *chaung* rises in the Ngadaung tract of the State of Momeik and for some distance forms the southern boundary of the district. Lower down it is known as the Madaya *chaung* in Mandalay District.

The Thabeitkyin Township is divided from Momeik by a line of hills which run southwards from the north bend of the Shweli until they meet the main axial range at Shwe-U-taung. The main ridge of this line forms the watershed between the Shweli and the Irrawaddy. It throws out just north of Tagaung a semi-circular projection which terminates at the comparatively low but isolated and conspicuous hill known as Tagaung *taung* $\Delta 2515$, which forms an outstanding feature as seen from steamers on the Irrawaddy. The main watershed itself gradually increases in height as it runs southward, but contains no hill of special interest until Shwe-U-daung is reached. The most prominent peaks lie a little east of the main watershed and are Hmaing-daing $\Delta 2183$, which however is not specially noticeable from the river, and Thaungbwet *taung* $\Delta 2827$, which indicates the line of demarcation between the Tagaung and Thabeitkyin townships. Due east of Twinngé there is a dip in this watershed where, at a height of only about 950 feet, the main road from Momeik to the Irrawaddy crosses the ridge at Thitkwebin *Sakan*.

At right angles to the above watershed runs the confused mass of hills with a general trend from west to east, rising from the Irrawaddy in the lower half of the Thabeitkyin Subdivision and possessing two marked ranges divided by the Kin *chaung*, which flows from south to north. The westernmost of these immediately borders the south of the Momeik plain and has three very prominent peaks which are especially noticeable as the traveller passes along the main road to Mogôk. These are, in order from west to east, the Hnit-ma-daw-gale $\Delta 4631$, a sharp jungle-clad point, Shwe-U-daung $\Delta 6223$ with a curious knob-like protuberance at its summit, and Hnit-ma-daw-gyi $\Delta 5528$ with conspicuous grassy slopes along its apex. To the east of the Kin *chaung* the hills rise somewhat more rapidly, the main axis

trending to the south-east, until they culminate at Taungme Δ 7554 which dominates the Bernardmyo plateau and overshadows the Mogök valley. The main ridge passes almost due east through Kyini *taung* Δ 6733, which is the head of the prominent crater that closes the eastern end of the Mogök valley; thence running eastwards through Loichau Δ 7008 conspicuous by its steep cliff face, in the direction of Hsailon or Thelein and onwards to the mass of hills known as the Ngadaung hill tract of the Momeik State, ultimately connects with the north Shan States Hill System in the north-east of Taungbaung State.

Daw-nan-gye *taung* immediately south of Kyatpyin gives the finest view in the district for the least exertion, though it cannot in this respect compare with the peaks of Taungme and Loichau. Pingudaung, or Spider Hill, is a conspicuous isolated hill immediately north of Kyatpyin, surmounted by a solitary pagoda. At one time this was supposed to be the Ruby Matrix, and the Ruby Mines Company began to tunnel the hill with great hopes. Except, however, for the discovery of one stone worth £7,000, the results were disappointing. The Mogök valley itself, which is the main seat of the ruby industry, is enclosed between two high ridges, the northern of which joins Taungme to Kyini *taung*, while the southern one trends off from the latter peak in a south-south-westerly direction and culminates at Loi-kon-san Δ 5137. This ridge forms the east watershed of the various streamlets that drain the Mogök valley and combine to form the Yeni *chaung* which, after a course of about 18 miles, finally enters the Nampe *chaung* on the southern border.

Lakes.

There are no lakes properly so speaking in the district, but the tendency of the alluvial plain lying along the east bank of the Irrawaddy in the north of the Tagaung township to slope from west to east causes a narrow elevated ridge to form the immediate bank of the river, whence there is a gradual fall to the foot of the high *indaing* land forming the foot of the chain of hills dividing the Shweli and the Irrawaddy basins.

As a result, there is a regular chain of depressions, all more or less connected while the Irrawaddy is in flood, and forming an almost unbroken sketch of water in the height of the rains. As the main river falls the deeper hollows, each with its string of shallow depressions connected by one main channel, remain to form the local fisheries.

The permanent fisheries from north to south are (1) Indaung, (2) Yauk-thwa-saung, (3) Ywa-hmwe, (4)

Yeyin-Nga-lôn, (5) In-net, (6) Myit-laung, (7) Talawa, (8) Hlegan.

South of Tagaung Township the configuration of the country changes; the depressions are shallower and the water quickly drains back into the Irrawaddy, the only considerable exceptions being the Pinlegyi and Pinlenga to the north-east of Kyahnyat.

The Ruby Mines District is traversed by the great Salween Series of the Great Trigonometrical Survey which was commenced in 1900 by No. 24 Party, Survey of India, and will eventually be extended to the Mekong river.

Several stations of the Mandalay Meridional Series, which connects the Burma Coast Series with the Manipur Longitudinal Series, are also situated in the Ruby Mines district.

Reconnaissance survey of the Ruby Mines District was commenced early in 1887 by Colonel (then Captain) J. R. Hobday and was continued until 1893, when a complete map of the district on the scale of 1 inch = 4 miles was prepared.

The Topographical Survey of the district on the scale of 1 inch = 1 mile was commenced in 1896 by No. 10 Party of the Survey of India and was completed in 1909.

As early as 1888 a special survey of the Ruby tract was made, 21 square miles being surveyed on the 6-inch, and 56 square miles on the 2-inch scale.

Practically all the reserved forests in the district have been specially surveyed, mostly on the scale of 4 inches = 1 mile, by the Forest Survey Branch and by various parties of the Survey of India.

There is no cadastral survey.

Owing to the fact that the early records of the district were lost in the Court-house fire of 1899, and to the deceptive nature of the figures given in annual reports, where the averages of temperatures recorded in the various stations in the hills and in the plains were applied to the whole district, it is not possible to give reliable statistics of temperature and rainfall. The climatic conditions which obtain in the riverine tract of the district are absolutely and entirely different from those prevailing in the Mogök Subdivision, and an attempt to average sets of figures from the riverine and hilly sections yield statistics not merely of no practical value but absolutely misleading.

Temperatures, not having been taken by proper recording instruments, must be accepted with diffidence,

but such figures as are available would indicate at Mogôk—

	In May.	In July.	In Dec.
A mean of maximum readings	80°27	78°30	69°83
A mean of minimum readings	59°44	63°93	36°57

—as noted in the *Upper Burma Gazetteer*. At Mogôk itself there is almost an European climate. There is not, of course, the same bracing sensation in the air, and during the cold weather, both for Europeans and Natives, there is a considerable feeling of chill and discomfort, while during the rainy season, which extends from about May right on to November in the Mogôk valley itself, there is a tendency to depression. At one time the valley was a sort of Siberia which earned a well-merited reputation for deadly malaria among the Burmese. It was to this locality that the King used to banish inconvenient persons with the hope of soon getting rid of them. Persistent draining and clearing have rendered the valley somewhat healthier, though the native population still suffers considerably from malaria. In the *terai* country, at the foot of the hills towards the Irrawaddy and the Nampe *chaung*, malaria is of course very prevalent, while along the banks of the Irrawaddy itself and in the more open country in the northern part of the Tagaung Subdivision conditions approximate to those in the plain districts of Upper Burma. The plateau on which Bernardmy stands is considerably higher and more open than the Mogôk valley, but owing to difficulty of access has been given up as a military station and is no longer a military sanatorium.

The average annual rainfall at Mogôk from 1906 to 1913 has been 109°7 inches, at Tagaung 46°32 inches and at Thabeitkyin 41°41 inches. Thabeitkyin and Mogôk enjoy a more equable range of rainfall, but at Tagaung it has varied as much as from 37°31 inches in 1909 to 62°47 inches in 1910. Mogôkonal year (1892) had a little over 141 inches, which is abnormal.

**Geology
and
Mineral-
ogy.**

The whole of the Ruby Mines Subdivision is occupied by crystalline rocks, mainly gneisses and pyroxene granulites, traversed by tourmaline-bearing granite. Between Thabeitkyin and Mogôk, bands of crystalline limestone are interbedded with the gneiss, and from these the rubies of the district are derived. The stones were formerly obtained

from the limestone itself, but the principal sources now are the clays and other *débris* filling up fissures and caves in the limestone, and the alluvial gravel and clays of the valleys of Mogök and Kyatpyin. Besides rubies, sapphires and spinels with tourmaline and other precious stones are found in the alluvium. Graphite occurs in small flakes disseminated through the limestone, and in a few localities is concentrated in pockets of considerable size along the junction of the limestones with the gneiss. As regards the district as a whole, it may be stated that the soil on the hill sides is generally a stiff red clay, and in the valleys a rich alluvial mould. Rocks crop up at intervals over the whole area. These are chiefly limestone, but calc spar occurs in the neighbourhood of Mogök and marble towards the foot of the range westwards. At this point a fault occurs in the stratification and the marble is succeeded by sandstone along the Irrawaddy.

The distribution, etc., of precious stones is described in Chapter V.

In the Mogök township elephants pay periodical visits to the forest-clad hills, but probably owing to the destruction of high forests by *ya*-cutting *gaur* are scarce. Sambhu (*Rusa Aristotelis*) and barking deer (*Cervulus Aureus*) are very common, and serow are found in the Bernardmyo and Mogök hills. Rhinoceros have been met to the east and south of Mogök, but are uncommon. Tigers are fairly numerous around Mogök town, while leopard, bear (*Ursus Malayanus* and *U. Tibetanus*) and wild pig are also found. The remains of the "catfooted bear" have been found in a cave in the Mogök hills.

In Thabeitkyin and Tagaung Townships the game list is similar, with the addition of *saeing* (*Axis Sondaicus*) and *Thamin* (*Panolia Eldi*). The former occurs throughout the whole length of the Irrawaddy valley from Chaunggyi to Inywa, wherever *indaing* and bamboo forest is found, and is particularly plentiful amongst the *ins* and *lwins* of the Tagaung Township. *Thamin* are confined to two small patches of plain forest east of Tagaung. Elephant and *gaur* are also common throughout the hills dividing the Irrawaddy from the Madaya and Shweli drainages, whence they descend to the edge of the plain forests, the elephants especially being a regular curse to the cultivators.

Serow and rhinoceros have been recorded as occurring in the hilly portion of the Tagaung Township, but no specimen of either has been seen there during the last seven years; apart from the Mogök hills, both these species belong

properly to the northern slopes of the Taungdaw in Momeik State, whence they have been known to cross to the southern and western slopes in the Ruby Mines District proper.

Tigers abound in the Lower Shweh valley, especially in the area between Tuitson and Thandaung, and leopards are everywhere plentiful and sometimes very bold. At Inywa they have taken dogs off the verandahs of the houses in the village.

Small game. In the Mogök Subdivision the following varieties of pheasant and partridge are found :—

- The Grey Peacock Pheasant (*Polyplectron Chinquis*).
- The Burmese Barred-back Pheasant (*Calophasis Burmannicus*).
- Anderson's Silver Pheasant (*Gennaeus Andersoni*).
- The Ruby Mines Silver Pheasant (*Gennaeus Rufipes*).
- The Salween Silver Pheasant (*Gennaeus Sharpii*).
- Atlay's Silver Pheasant (*Gennaeus Atlayi*).
- Fytche's Bamboo Partridge (*Bambusicola Fytchii*).
- The Chinese Francolin (*Francolinus Chinensis*).
- The Arakan Hill Partridge (*Arboricola intermedia*).
- The Brown breasted Hill Partridge (*Arboricola Brunnei petus*).

Of these, only the francolin occurs in the plains, where, in addition, there is the black-breasted Kalij pheasant (*Gennaeus Horsfieldi*). Jungle fowl are fairly common everywhere and several varieties of pigeon. Round Kyat-pyin and Mogök woodcock have been shot in reasonable numbers, but snipe are scarce in the hills.

In the Thabeitkyin Subdivision the ordinary game birds occur which are to be found on the banks of the Irrawaddy and on the lakes generally in Upper Burma, sometimes in considerable quantities, and geese, duck, teal and snipe frequent the many *ins* or fisheries in the Tagaung Township around the edges of which the cultivators work *mayin*. Of small birds with quaint and sometimes brilliant plumage there appears to be a fair stock, but so far no one has devoted special attention to them locally. There are at least two kinds of toucan, and pelicans and Sarus cranes are not uncommon.

Ichthyo-
logy.

The chief varieties of fish caught in the fisheries of the district may be divided into two groups :—

- (a) Those that live and spawn in the *ins*—
 - Nga Yan (*Ophiocephalus*).
 - Nga Gyi (*Saccobranchus fossilis*).
 - Nga Myit Chin (*Labeo Rohita*).

Nga Thein.

Nga Byema (*Anabas Scandeus*).

(b) Those that live in the Irrawaddy and only enter the *ins* at high water, making their way back to the main river as the water falls —

Nga Bat (*Wallago atta*).

Nga Iwe.

Nga Myin-yin.

Nga Thaing (*Catla Buchananii*).

Nga Iyin (*Cirrhina mrigala*).

Nga Lu.

Nga Le.

Nga Byet.

The fisheries are described in Chapter IV. The most important fish from a commercial point of view is the Nga Thaing.

In some of the streams of the Mogôk Subdivision the Mahseer is found, but the tailings from the mines have ruined many from a fisherman's point of view.

CHAPTER II.

HISTORY AND ARCHAEOLOGY.

There was not in Burmese times any jurisdiction approximating to what now constitutes the Ruby Mines District, which is made up of sections of a considerable number of native jurisdictions. Taking the riverine portion of the district first and starting from the north, what is now the Thabeitkyin Subdivision includes a portion of the old Burmese Myadaung *wun's* jurisdiction. The present Tagaung Township contains the *cis-Irrawaddy* portion of Myadaung *plus* the old Tagaung *myothugyiship*, the dividing line between the townships of Tagaung and Thabeitkyin being the Tadaung-Gya *chaung*, the last accepted boundary between the pre-annexation jurisdictions of Tagaung and Hinthaung.

The old Myadaung *wunship*, as it stood at the annexation, finally embraced all that part of the Irrawaddy drainage between the Lower Shweli on the north and the Tagaung jurisdiction on the south that lay to the west of the long line of hills which runs southwards from about the neighbourhood of Laung-Daw-U on the Shweli.

Prior to this, however, there had been in the interior an independent jurisdiction known as the Tonbo Cheikthin

pawmaingship which dated from the time of the Sittan Sayin or Domesday Book of 1145-1161 B.E., the head of which possessed a separate seal and paid in revenue direct to Mandalay, and not through the Myadaung *wun*. The area originally included within this jurisdiction was considerable, extending up the Shweli to Laung-Daw-U and including a stretch of country to the north of that river (including such villages as Kuga, Bwet, etc., now forming part of the Wettu-Kan *kayaing* of the Katha District). Southward this *pawmaingship* extended as far as Satsa, east of Myadaung, and in fact took in all the area between the watershed and the Irrawaddy except in the immediate vicinity of the river bank (which formed part of the Myadaung *wun*) from the mouth of the Shweli to the neighbourhood of Myadaung. There are said to have been in all some 36 villages under the Tonbo Cheikthin *pawmaing*, whereof 12 formed the Ywama or original settlement, while the later villages that sprang into existence were known as the "Pwa-ya-ywa." The jurisdiction was originally subordinate to the Momeik *sawbwa*, who appointed the first three *pawmaings*, but in Bodawpaya's time seems to have come directly under the Burmese kings, whose nominee, Shwe Dun, was *pawmaing* when, about 1220 B.E., the then Myadaung *wun* U Po (having doubtless squared the Palace officials annexed the *pawmaingship* and split it up into three jurisdictions:—

(a) The Atet Shweli *kayaing*, stretching along the south bank of the Shweli from Laung-Daw-U to the Thebyu *chaung* just below the village of Thandaung. This area was placed under a *chaung-ðk* (the original nominee being one Ko Pe) immediately subordinate to the Myadaung *wun*.

(b) The Shweli *Auk-Paing*, which included the lower portion of the Shweli valley along the south bank from the Thebyu *chaung* to the Leppan *chaung-bank* just west of Pyinlebin, as well as the line of inland villages stretching south from Pyinlebin to Tonbo, namely, Indaung, Paukuet, and Wundingon. This area was placed by the Myadaung *wun* under a *pawmaing*, the first being Maung Hmat, a half-brother of the lately evicted Shwe Dun. It comprised the main portion of the former Tonbo Cheikthin *pawmaingship* that lay within the Irrawaddy drainage, with the exception of the extreme south (*i.e.* Satsa and its neighbourhood, which was merged in Myadaung).

(c) A separate *Wettu kayaing* taking in all that portion of the old Tonbo jurisdiction that lay north of the Shweli

river was placed under a *kayaing-ôk* immediately subordinate to the Myadaung *wun*.

This area (c) fell ultimately to the Katha District when the Myadaung *wunship* was divided up after the annexation while area (a) (the *Atet Shweli* jurisdiction) fell to the Ruby Mines District.

As regards area (b), which continued in its shorn condition to be known as the Tonbo *Pawmaing*ship, it would appear that Maung Hmat was not long left in charge and that the Myadaung *wun* proceeded to put in a series of *pawmaings* from among his followers according to his caprice, the old hereditary line being disregarded.

This continued till the annexation, when in consequence of the disturbed state of the country all the villages in this jurisdiction, with the exception of Tonbo, Cheikthin and Naung Palan, were deserted. The *pawmaing* Maung Lu Gale appears to have concluded that it was safer to live in Myadaung. For deserting his charge he was dismissed by the Deputy Commissioner (of Katha) and was succeeded by Maung Po Sin, who, under the title of *thugyz*, remained in charge of Tonbo Cheikthin till 1911 when he resigned in favour of his son.

After the annexation other villages in this tract were repopulated and formed into independent jurisdictions, each with a *thugyz* of its own.

The successful absorption of this territory seems to have stirred the ambition of the Myadaung *wuns*, and we accordingly find that in about 1242 B.E. the then *wun* U Pe managed to get himself appointed *chauk-myo-wun* over the six *myothugyiships* of (1) Myadaung (for the *wun* always appointed a *myothugyi*, generally a son or some near relation, under himself at his headquarters), (2) Katha, (3) Kyundaung (both of which now belong to Katha District), (4) Tagaung, (5) Hinthamaw and (6) Kyahnyat, the major portion of the last three now belonging to the Ruby Mines District). U Pe continued to hold the post of *chauk-myo-wun* till a year after the annexation when he was offered the position of *Myôk*. He declined and went to Mandalay, leaving his son Maung Gyi in charge as *myothugyi* of Myadaung. The charge extended to both sides of the Irrawaddy till Maung Gyi's death in about 1892, when it was split into two, Tigyait and Myadaung.

The Shweli *Atet-Paing* had a chequered history. The *choung-ôk* appointed by the Myadaung *wun* at first exercised no authority over the upper portion, which formed a separate jurisdiction, called the Lebo-leywa, but later on U

Shweli
Atet-
Paing.

Nin of Thandaung appears to have been appointed to the charge of the whole of the Upper Shweli. He was followed by his son Maung Pe, who, after a series of intrigues and splittings and amalgamations of jurisdictions, was ejected by Maung Yan Gin, who held the *lebo-leywa* and who thus secured the supremacy over the whole Lower Shweli. The Myadaung *wun* later transferred Yan Gin to the charge of the Maingtha *kayaing* in favour of one Maung E of Myadaung. He appears to have embezzled money and fled. Owing to Kachin raids about that time, all villages above Thandaung are said to have been deserted, and when Maung Kyauk Lôn of Dobin became *chaung-ôk* there was no regular village left above that point. Shortly afterwards Maung Paung of Tonbo was again given the *chaung-ôk*-ship of the whole Shweli from Laungdaw-U to the Leppan *bauk*, but he also embezzled money and fled, and the original *chaung-ôk*, Maung Pe, recovered the *kayaing*. He continued to be *chaung-ôk* till the annexation, when he was murdered by one Maung Sin at Pavadaung village. For services rendered in repelling an attack on Kaha, the Myadaung *Wun* had given the jurisdiction over the *lebo-leywa* to Ma Tu, a Kachin of Manpon. Maung Pe, however, refused to yield the estate, whereupon Ma Tu hired Maung Sin, a tattooer, to murder him. Retribution overtook the murderer not long afterwards; the Kachin *duwa* of Molon, suspecting him of a plot to put him out of the way, effectually fore-told him. After Maung Pe's death the villages in the Upper Shweli appear to have been left uncontrolled until British influence was established at Katha, when all this area was included in the Katha District. Further distributions of authority were made until after many vicissitudes there emerged the Mengo and Pyindaung *myothugyi*-ships, the former of which was split up into ordinary village charges in 1910, on the death of the last *myothugyi* Po Myin in 1910, while the latter is now divided into two charges, Pyindaungyi and Pyindaungale.

Shweli Auk-Paing. The Shweli *Auk-Paing*, after suffering from several dishonest *chaung-ôks*, was split up in 1914 into the two charges of Dobin and Pöngon, and that arrangement continues to the present time.

Pyinlebin was the original parent village on the Lower Shweli. Little of its ancient history is known. It was known as "Kanthila" or "Panthila." The latter name is supposed to have been derived from the fact that the inhabitants had to present a "pan" or flower to the royal court—then at Tagaung. Later tradition says that the

"Kwetalaings" came and attacked it, and it was deserted until, in 1247 B.E., two or three households from Shwebo under Maung Dwa arrived, and the village gradually increased with the revival of the local unreserved timber trade.

The next jurisdiction south of the Myadaung *myothugyi*-ship was in Burmese times the Tagaung jurisdiction, originally under a *myothugyi*, who was subordinate to the *myothugyi* of Myitsin or riverine *wun*. The area included therein did not materially differ from the portion of the *myothugyi*-ship now included within the Ruby Mines District, except that the large Daunggyi island just alongside the right bank of the Irrawaddy, formerly in Tagaung, has now been included in Katha District. In the old times the Tagaung *myothugyi* used to appoint a *kyun-ôk* to look after this island and the important fishing industry thereon, but since the annexation the main channel of the Irrawaddy, in so far as it lies north of Tôn-nge village, has been the accepted boundary between the two districts.

From time to time there were interposed between the *myothugyi* of Tagaung and the Myitsin *wun* officials in the shape of *Myôôns*, who got themselves appointed in a fitful fashion according as they could bribe the *hlutdaw* officials, with the object of extracting a middleman's profits from the revenue, but otherwise took no local interest in Tagaung, to which locality they were invariably strangers. The Tagaung *myothugyi* appointed *thugyis*, or rather *gaungs*, at his pleasure in the villages in his jurisdiction, and dispensed justice. Within the memory of old inhabitants (about 1221 B.E.) one U Lugyi of Pyinsal, bought favour with the *hlutdaw* and secured the *myothugyi*-ship of Tagaung from the then holder Shwe U, who fled to Mandalay. U Lugyi was a strong man, who maintained his hold on the office till the annexation, though from time to time he had to put up with the authority of *wuns* appointed in the same capricious way from the Palace. Sometimes the *wuns* managed to secure more than one prize. In about 1238 B.E. U Te Naung was appointed *le-myo-wun* over the *myothugyi*-ships of Kyundaung (now included in Katha) and of Tagaung, Hinthamaw, and Kyahnyat in this district, but his successor, *wun* U Thi, was killed by the rebel Padein Sa and the old charges re-emerged, though Tagaung remained under a *wun* of its own, named U Waing. Further shufflings took place from time to time until Maung Pe, the Myadaung *wun* as described above, procured his own appointment as Chaukmyo *wun* and Tagaung was merged, with its neighbours, in the wider

Tagaung
myothugyi-ship.

charge. When, a year after the annexation, the *wun* declined to serve under the British Government, U Lugi, the Tagaung *myothugyi*, was ousted by Maung Kyè and joined the Wuntho *sawbwa*. Maung Kyè was confirmed as *myothugyi* by the Deputy Commissioner of Katha, but was eventually sent to jail for embezzling revenue, and the present *thugyi* of Tagaung, Maung Peik, who was then a Government telegraph clerk at Shwebo, was put in his place. The Tagaung jurisdiction stretched along both sides of the Irrawaddy, including on the west a narrow strip of country of an average width of 2 miles, which is uninhabited except along the river edge.

Hintha-
maw
myothu-
gyiship.

The next jurisdiction to the south was the Hinthamaw *myothugyi*ship. This old Burmese jurisdiction used to be under a *myothugyi*. To the east of the Irrawaddy, it occupied the area between the Tagaung and Kyahnyat *myothugyi*ships, and marched with the Momeik State along its eastern edge. To the west of the Irrawaddy it took in a narrow strip of land which now contains the village of Ngayinbyu and the hamlet of Gonga, and abutted on the Pyinsala *myothugyi*ship of the Katha District.

At one time it contained no less than fifteen villages, which have now dwindled to two—Hinthamaw on the east and Ngayinbyu on the west, the latter forming an independent *thugyi*'s charge. The *myothugyi*ship has, so far as local memory goes, been retained in one family.

Like its neighbours, the *myothugyi*ship was alternately independent and subject to the nominees of the Court. Its jurisdiction is included in the present Ruby Mines District.

Kya-
hnyat
myothu-
gyiship.

South of Hinthamaw, and similarly embracing an area on both sides of the Irrawaddy, lay the Kyahnyat *myothugyi*ship. This old Burmese jurisdiction covered the area now contained within the following separate village jurisdictions:—

Padibyu	Shwesaga
Tamaw-wa	Sagyidaw
Kyahnyat	Wayôngon
Myintha	Thigôn

Yegya

whereof all but Tamaw-wa lie to the east of the Irrawaddy.

The past history of this charge is very similar to that of Hinthamaw, both in the hereditary nature of the *myothugyi*ship and in its occasional subordination to outside officials, but one of the *myothugyi*s did a bit of land-grabbing on his own account, and about 1245 B.C. tried to annex the Daungbôn-Nga-Ywa area of Momeik. He appears to have got a royal order, on the strength of

entries in the old histories, to fix his boundaries at the Shwelaung *chaung*, and proceeded to fix on a stream near the village of Myegya as the Shwelaung of the chronicles. The Daungbôn-Nga-Ywa tract was temporarily deserted, but after the British annexation its inhabitants returned under their own headman and recovered possession.

With regard to that portion of the Kyahnyat jurisdiction which lay to the west of the Irrawaddy, there was no very definite boundary in Burmese times. The stretch of country lying immediately west of the river in these parts was practically uninhabited, and has only lately become of importance owing to the formation of the Gonga Forest Reserve. It was claimed by the Baw *myothugyi* of the Shwebo District, and finally a practical line following the most conspicuous natural features was notified. It may be accepted that for all practical purposes the whole of the Kyahnyat *myothugyiship*, as it existed in Burmese times, has been merged in the Ruby Mines District.

From the above it will be seen that the Ruby Mines District now contains no less than three and part of a fourth out of the six jurisdictions which were included in the Chauk-myo *wunship*. Of the state of affairs in this *wunship* in Burmese times the best account is that furnished by U U, son of U Yo of Tigyaing, whose father was *myodein* of Kyundaung, and who himself had been Chauk-myo *scye-gyi* in Burmese times.

Each circle was governed by a *myothugyi* appointed by the King. No land revenue or *thatthameda* tax was known, but there was a tax known as " *kunbodaw*" ကုပ္ပါဝါဘာဝ which was paid to the King by the circles direct. This was as follows :—

Kyahnyat	... 3	viss silver	Aseikke အစိတ်
Hinthamaw	... 2½	viss	do.
Tagaung	4	viss	do.
Chundaung	5	viss	do.
Myadaung	... 10	viss	do.
Katha	... 5	viss	do.

This—the only—tax was collected from the villagers according to their means. In or about the year 1214 B.E. Pagan Min was deposed and Minaon Min ascended the throne. The *kunbodaw* tax was continued up to 1218 B.E., when it was abolished and the *thatthameda* tax introduced. The rate of *thatthameda* was then only Rs. 3 per house (not per household). The *myothugyis* collected this tax from their respective circles and paid it direct to the King. In the year 1221 B.E.

the *thathameda* rate was enhanced to Rs. 6 per house. In the year 1222 B.E. a *wun* by the name of U I was appointed over Hinthamaw, Kyahnyat, Tagaung and Chundaung *myothugyi*ships, and the *thathameda* rate was again enhanced to Rs. 8. Two years later there was a further concentration of authority in the person of a Myoök over seven *myos*, who was in turn superseded in 1226 B.E. by a *myitsin-wun*, having jurisdiction all along the river. In 1227 B.E. this official was replaced by the Kanni *atwinwun*, and the *thathameda* rate was again enhanced to Rs. 10 per house under a new law known as *pangondaw*, ပံ့ပို့ကိုင်းဝေးဝေး၏ framed by the King. In 1223 B.E. the Myingun rebellion broke out, the Kanni *atwinwun* was dismissed, and the Myadaung *myothugyi* U Po, who assisted the King in the suppression of the rising, was appointed *myitsin-wun* of the riverine tract as far north as Bhamo, with jurisdiction over the twin states of Momeik-Mahlaing. He was given the title of *mingyimahanawyata*. U Po died in 1230, and his son U Pe became *wun* at Myadaung, with Katha, Myadaung, Chundaung, Tagaung, Hinthamaw and Kyahnyat circles under him. In 1231 B.E. land revenue was introduced by the King. The rate of assessment was 10 baskets in every 100 baskets of paddy produced. In the first year land revenue was collected in kind and sent down to the King in boats, but in subsequent years a money rate was levied. Nominally the rate of assessment was still 10 per cent. on the produce, but the Myadaung *wun* collected from 50 to 200 rupees from each village according to its means.

Out of this amount the *wun* sent a portion to the King, and the balance he kept himself for his wives and followers. By this system the people paid more than double the taxes authorised by the King. Similarly, in the case of the Royal tax on timber and forest produce—

Timber	...	... at Rs. 3 per <i>atña</i>
Bamboos	...	... at As. 8 per 100
Canes	...	... at As. 4 per 100
<i>Inawe</i>	...	... at As. 4 per viss

—the people in practice paid twice, once to the King and once to the *wun*. The distinction between *bobabaing* and *ayadaw* was not clearly recognised. Whether land was *bobabaing* or *ayadaw*, if the occupier or owner left it and went to some other village, the *thugyi* had the right to let the land to any new settler. This system was known as *thuwin-nga-twet* ထူးငါးတွေ့၏.

South of the Kyahnyat *myothugyi*ship, and confined solely to the east bank of the Irrawaddy, lay what is now known as the Daungbôn-Nga-Ywa tract and the Twinngè *kayaing*. So far as can be gathered from local tradition, the country south of the Kyahnyat *myothugyi*ship and between it and the Theingadaw *kayaing*, (if the small portion of the Malè *myothugyi*ship which extended to the east of the Irrawaddy near and round Sabenago be excluded), was ruled by the Tonkwe *Preso*. Tonkwe is now a small hamlet subordinate to the Kyaukpyu *thugyi*. In those days Tonkwe was a very large village, but there were no villages between it and the river. Traders from Momeik State with pack bullocks used to halt at Tonkwe till they could arrange with Mandalay and Sabenago traders for an exchange of goods on the river bank. The inconvenience of this arrangement led to the foundation of Twinngè, and the extension of trade and cultivation to the establishment of intermediate villages such as Daungbôn.

In the reign of the King Ba-gyi-daw, Twinngè was part of the Sabenago *myo*, which was "eaten" by one of the Royal Princes, and, with the surrounding villages, was in charge of a "ywasa". In the time of *ywasa* Aung Gyi the Möng Mit *sawbwa*, Hkun Te, asked the King for an outlet to the Irrawaddy (a *Min-Tet*, i.e., "prince's ladder") and the King ceded to him the Twinngè *ywasaship*, which then consisted of fourteen villages.

To this charge the *sawbwa* appointed a *kayaing-ôk*, and the seventh nominee, Bo Maung, was in possession at the time of the British annexation. His successor, Wisaya, was the last *kayaing-ôk*. In his time, when the Nyaung-Ywe *sawbwa* was temporarily in charge of Möng Mit State, the *kayaing-ôk*ship was split up and made into independent *thugyi*ships.

In 1241 B.E., while the young Möng Mit *sawbwa*, Kan Ho, was attached to the palace, King Thibaw authorised him to receive back the Daungbôn Nga Ywa from the Kyahnyat *myothugyi*, Maung Po Ya. Po Ya protested, and in the year of the annexation representatives of either party repaired to Mandalay, well provided with the usual arguments. Rs. 2,000 were distributed to the officials by the Möng Mit party, but the Kyahnyat *myothugyi* was before them and secured the royal order. The Möng Mit deputies returned discomfited, and the inhabitants of the Nga Ywa fled to the nearest villages of the Twinngè *kayaing* to be out of the usurper's way. This was in *Waso* 1246 B.E., and in *Tazaungmô* of that year the British arrived on the scene.

Daung-
bôn-Nga-
Ywa and
Twinngè
Kayaing.

The whole country was disturbed, dacoits arose, Bo Maung turned rebel and harried the country, and the inhabitants of all the area included in the Twinngè and Daungbôn Nga-Ywa jurisdictions fled to distant places.

Bo Maung was originally a disciple of Hein Kan (the Hein of Wapyudaung jurisdiction, then subordinate to Möng Mit) and actually at the time of his appointment held the post of *tamôn* or *thugyi* of Kyaukhlebin under Hein Kan. He received his promotion at the recommendation of his predecessor, Maung Yit, who was promoted to *amat* some five years before the annexation. After the British occupation he espoused the cause of Kan Hlaing, the Mohlaing claimant, to the vacant throne of Möng Mit, who was supported also by the Myadaung *wun*. In order to press Kan Hlaing's claims, Bo Maung commenced collecting supplies and men from the whole of the Twinngè and Daungbôn *kayaings*. They then marched *viú* Webaung to Sagadaung, where the Möng Mit army under *Tamôn* Lan (also known as Wisaya) withstood and besieged them. Wisaya was wounded, and under his successor, U Sandi, the Möng Mit forces, in revenge for the assistance given to the pretender, sent armed parties through the two *kayaings* and burned out all the villages down to Twinngè on the west and Önbaing on the south. After four or five months' siege at Sagadaung, Kan Hlaing, his *amat* U Yit, and Bo Maung escaped and took shelter with the Kyahnyat *myothugyi*. Threatened by the British authorities at Katha, Bo Maung took to the jungles near Shwesaga, where he harried such of the villagers as ventured to return home. Wisaya, recovered of his wound, was appointed *kayaing-ôk* of Twinngè and he and Bo Maung carried on a desultory warfare, the latter at one time even managing to burn Twinngè and Daungbôn villages during Wisaya's absence, but the outlaw was finally disposed of, and about 1248 B.E. the people recovered confidence, the old villages were gradually reoccupied and Wisaya's authority as *kayaing-ôk* was established.

Meanwhile, on the strength of the order obtained from the Burmese Court, the Kyahnyat *myothugyi* Po Ya had claimed authority over the Daungbôn Nga-Ywa, and this claim was not disputed by the new Government. But one day three of his followers murdered a man and his wife in the jungle near Sulegôn; enquiries were set on foot and Po Ya disclaimed responsibility, alleging that the area was not under him. This gave the Möng Mit *amats* good ground for claiming and recovering the Daungbôn area, which they did.

Later on the Daungbôn Nga-Ywa was split up into independent *thugyiships*.

The south boundary of Twinngè extended as far as the Wapyudaung *kayaing*, and at one time included it, but in King Mindon's time the hilly tract was found difficult to control and was given up by Möng Mit State.

To the south of the Twinngè *kayaing*, and projecting across to take in a small area east of the Irrawaddy, came a portion of the Sabenago or Malè *myothugyiship*. The *myothugyi* in Burmese times resided indifferently at either place. Most of this jurisdiction lay west of the Irrawaddy and is now in the Shwebo District.

The area east of the river now comprises only three villages whose inhabitants subsist mainly by timber trading, the soil being very poor.

Below the Malè *myothugyiship*, and extending to about three miles north of the present village of Thabeitkyin, the Theingadaw *myothugyiship* stretched across the river. It included Theingadaw, now belonging to Shwebo, and the present Thabeitkyin, Ônson, and Chaunggyi village jurisdictions of this district. The whole of the land was regarded as "*Payu Ne Mye*," as being dedicated to the upkeep of the celebrated Theingadaw pagoda, situated on a small island in the first defile. Thabeitkyin at that time was a miserable fishing hamlet of no importance at all; Ônson was the only village where cultivation was practised to any extent, and was at one time a separate *kayaing*, abutting on the Twinngè and Wapyudaung jurisdictions. The local system of land tenure was the communal "*Pakondan*" system which also prevailed in Twinngè and Wapyudaung.

The southern boundary of the Theingadaw *myothugyiship* was the Chaunggyi *chaung*, but the present village tract of Chaunggyi comprises an area of paddy land which in pre-annexation days was in the charge of the Singu *myothugyi* of the Mandalay District. For administrative convenience the Theingadaw jurisdiction was divided up, the Shwebo District taking the portion west of the Irrawaddy while the Ruby Mines has retained all that lay to the east.

The Wapyudaung *kayaing* lay south of the Twinngè *kayaing* and between the area comprised in the Kyatpyin *so* to the east and Theingadaw *bo-galeship* on the west. It formerly included the following villages (whereof the first four only are now left, all situated along the main Tonga road from Thabeitkyin to Mogôk, the remainder being deserted).

Ruby Mines District.

(1) Wapyudaung and its hamlets, (2) Nyaungbintha, (3) Posa, (4) Kyauklebein, (5) Meinmatnat, (6) Ôn-hmyin, (7) Kyetshadaw, (8) Kyauk-palu, (9) Nanhat, (10) Kun chaung, (11) Tigyaw, (12) Tônlon, (13) Manset, (14) Ôn-hmok taung, (15) Natpan, (16) Le-U Kyundon-Le, (17) Ontana, (18) Pindaing, (19) Zani chaung and (20) Linne chaung.

Originally this tract formed part of the Twinngè *kayaing*, subordinate to the Möng Mit *sawbwa*, but owing to its distance therefrom was afterwards placed under a separate *kayaing-ôk*. These *kayaing-ôks* were, in succession, (1) Hein'San Hin (2), Bo Sein Gale, (3) Po Tu, (4) U T'yinnya, (5) U Aung Ban, (6) Po San, (7) U Twa Gyi, the Theni Tañôn, and (8) Ko Nyein (son of U Twa Gyi). Except the first two, the various *kayaing-ôks* were not interrelated and the post was not hereditary. As Maung Nyein could not keep order, and it was important for the King's coffers that access to the Ruby Mines should be tolerably safe, Mindon Min, in 1237 B E., took the *kayaing* away from Möng Mit and appointed one U Hka Gyi to be *kayaing-ôk*. The latter found the task too much for him and surrendered it. The King then asked the Ma U *sayadaw* to choose a man. In the interval a Myindat Bo was stationed with some Burmese soldiers at Wapyudaung to keep the road to Mogôk open. The Ma U *sayadaw* chose Po Hein Kan, and on his taking charge the troops were withdrawn.

Hein Kan was no more successful in keeping down dacoity and, as he wisely refused to go to Mandalay when summoned to explain, a Myindat Bo was sent to ravage the country while Hein Kan took to the jungle. The area was then incorporated in Burma proper and made over to the Theingadaw *wun*, who appointed one U Nu as *kayaing-ôk*, but the latter was attacked and driven out by Hein Kan, and Paw Lan Se (brother-in-law of Maung Hmat, "the ruby king") was appointed as a temporary measure. He, having restored order, surrendered his appointment and returned to Mogôk. The *sitkè* of Malè, U Po Ya (who acted as Assistant to the Theingadaw *wun*, who was a *thon-myowun* over Theingadaw, Malè and Wapyudaung) appointed one Hkun Maung to fill the vacancy. This man held the *kayaing-ôkship* till the annexation. A year after that, owing to the continually disturbed state of the road and the desertion of most of the villages, the *kayaing-ôkship* was broken up. Thereafter, as the villages sprung up again, independent *thugyis* were appointed over them. In Burmese times there had been *thugyis* in the villages under the *kayaing-ôk*, but they drew no commission, were in no

way hereditary and were appointed and removed at the *kayaing-ók's* pleasure.

This completes the comparatively recent local history, just prior to the annexation, of the whole of the area now included in the Thabeitkyin subdivision in so far as it has been gathered from local sources. The unfortunate burning of the court-house with all records of the past in 1899 has destroyed any chance of checking the above statements with contemporaneous local official records.

The subdivision consists of the three former *so's* or History jurisdictions of McGök, Kyatpyin and Kathe, embracing the area known as the *Yetuna Twet Mye* or Stone Tract. From the earliest times of European knowledge of and intercourse with this country the name of Burma seems to have been connected with rubies in the minds of the hearer as inevitably as the so-called white elephant described by the first European visitor, Nicolo di Conti (:420—1444 A.D.),—Marco Polo probably did not set foot in Burma. Ludovico di Varthema visited Pegu in 1476 and makes special reference to the giant bamboos and rubies; while, in visiting Pegu in 1580, Ralph Fitch, the first Englishman to arrive on the scene, says:—

“Caplan is the place where they finde the rubies, “saphires and spinelles, it standeth sixe dayes journey from “Ava in the kingdome of Pegu. There are many great high “hilles out of which they digge them. None may go to the “pits but onely those which digge them.”*

Yule in the “Mission to the Court of Ava” remarks about the ruby mines:—

“Their locality is always called by the old travellers, “Kapelan, or ‘Capelangan,’ sometimes spoken of as a “kingdom, sometimes as a city, or as a great mountain. The “name is suggestive of the Palaungs, a tribe inhabiting the “hills immediately east of the mines. If one might hazard “a further suggestion, *kha* signifying a river in the language “of the adjoining Kakhyens, *kha Paloun* may have been the “name of the valley. The old Portuguese ‘Summary of East-“ern Realms, Cities, and Peoples’ translated in Ramusio “(Vol. 8), says that about Capelangan there are ‘molte “terre habitate da gente non molto domestica,’ a description “applying strictly to the Kakhyens, if not to the more indus-“trious Palaungs.

“In the thirteenth century the Talain chronicles speak “of a kingdom of ‘Kanpalan’ to the northward of the then

of the
Mogök
Subdivi-
sion
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ation.

* Fitch, page 172.

"kingdom of Martaban (Mason's Natural Productions of Burma, page 435). But this can scarcely have been so far north as the Ruby Mines District."*

"The Ruby Mines of Burma have been long known, although the jealousy of the native Government has prevented their being visited by many Europeans.

"They are situated north-east from the capital, and distant about sixty to seventy miles.

"The principal road to them leaves the river Irrawaddy "at Tsinguh-mo (Singu) and passes through Shue-male "(Male). There are other roads, from Tsanpaynago (Sabenago) and other villages to the north. The mines lie nearly "due east from this village, being separated from the valley "of the Irrawaddy by the lofty range of the Shuedoung "mountains (Shwe-U-Taung). The villages in the immediate "neighbourhood of the mines are Kyatpen, Mogouk, and "Katheyuwa. The precise limits within which the gems are "found are unknown but they are, or have been, procured "over an area of probably 100 square miles."†

It originally formed part of the Momeik State. Sangermano writing in the second decade of the nineteenth century says, "all that tract of land which extends from 25° "20' north latitude between the Chinese Province of Junan, "Siam, and the Kingdom of Ava is inhabited by a numerous "nation called Sciam (Shans) who are the same as the Laos. "Their kingdom is divided into small districts under different "chiefs called Zaboa or petty princes (Sawbwa). From the "time of Alemptra, the present King's father, till the begin- "ning of the present reign all these Zaboa were subjects and "tributaries of the Burmese; but the cruel despotism, the "continual vexations and oppressions of their masters have "forced many of them to rebel."‡ When speaking about revenues and taxes of the Burmese empire Sangermano re- marked: "The fixed revenues of the Burmese Emperor con- sist of a duty of 10 per cent. on all merchandise brought by "foreigners into Rangoon or any other of the ports of Pegu; "of the produce of the mines of silver, amber and rubies, of "certain contributions in rice which several places are obliged "to furnish for the use of the palace and of the presents which "on stated days are made by the Mandarins to the Emperor. " But though the Burmese monarch "has no fixed revenues besides these, still his means are far "from being limited to them alone. For as he considers the

* Yule, page 179.

† *Ibid*, page 347.

‡ Sangermano, page 36.

"property of his subjects as in reality belonging to himself, "he therefore exacts from them anything he pleases ; so that "it may be said, with truth, that the unfortunate Burmese "labour in acquiring riches, not for themselves or their "children, but merely to gratify the avarice of the Emperor ; "as their possessions almost invariably find their way, sooner "or later, into the royal treasury."*

It was doubtless acting on these principles that the Burmese King Nuha-Thura Maha Dhama-Yaza in the year 959 B.E. (1597 A.D.)† proceeded to ratify a royal order proclaiming the annexation of this tract from Momeik State. A copy of this order was found in a *parabaik* known as the 'white *parabaik*' produced to me on 10th August 1906 by the *ex-Thon-So-Ök* Maung Nyo. It runs as follows :—

သုတေသန ၁၅၉၇။ တော်သတင်းလုပ်လျှော် ၁၂၂၃။ ရတနေ့။ ရထာနာပု ရထု။ ရွှေဝိုင်းကြီးထည်ဝေါ်မှုသည်။ မိုးကုပ်ကျိုမြင်သည်။ ရထာနာတော်လျှော် သည်။ အောင်ကြိုးအောင်အပါဖြစ်ဝေရမည်။ မိုးမိတ်ဝေါ်တွေးမံရင်ရှုပြစ်သည်။ မိုးကုပ်ကျိုပြုပုံကုပ်တိပုံရမည်။ မိုးထုပ်ကျိုပြစ်အစားထင်ကောင်းမြှင့်။ အ ရုံအကာနှင့်တက္ကာ။ အပ်တော်မူသည်။ မိုးမိတ်ဖို့ကလိမ်း။ မိုးထုပ်ကျိုပြစ်မှာ အောင်ဖြူတွေးထည်ရာ။ ရထာနာတော်ဝင်။ တော်လျှော်တွေးအကြိုးဝတ်သားအဝင် အပ်ဖို့တိုင်နှင့်တို့တာ။ သာရင်းအင်းချုပ်ချုပ်အိုးထောက်သွင်းရမည်။ မိုးမိတ် ဖို့ကမာန်မယားနှင့်။ နှုတ်တော်မူသည်။ ထကောင်းမြှိုက် အစားထဲ့တော်မူ၍။ အင်တော်မူလေပြီးသည်။ အောင်ကြိုးတွင်ထင်းချုပ်။

သုတေသန ၁၅၉၇။ ရွှေဝိုင်းသတင်းကျော်လုပ်လျှော် ၁၂၃၃။ ရတနေ့။
နားခံတော်ပြော့လွှိုး။

Translation.

Shwe-Wa-myo (Ava) was established on 12th *Labyigyaω Tawthalin* of 959 B.E. It is the Ratna Pura (Ratna = Gem, and Pura = City).

Mogök and Kyatpyin are names for Gem. They should be included in the Shwewamyo. These two were part of Momeik *Sawbwa's* States but should be excluded and Tagaung *Myo* with its surrounding villages be included in the State instead.

It is ordered that the Momeik *Sawbwa* take possession of Tagaungmyo and that Mogök and Kyatpyin be given

* Sangermano, page 73.

† According to Phayre, Maha-Dham-ma-ya-za did not succeed till 1605 A.D. (page 128).

over to Shwewamyo. The *Wuns* concerned must take over the rubies with a list of all descriptions (big and small) and pay into the Government Treasury.

No appointments whatever are therefore to be made by the *Sawbwa* to Mogök and Kyatpyin which have been given to Shwewamyo in exchange for Tagaungmyo

NAKHANDAWPYAWGYIMA.

5th Thadingyut Labyigya, 959 B.E.

From a *parabaik* copy of this order found in the hands of the *ex-Kathē so-thugyi* U Gaing, the boundaries of the tract then taken over appear to have been "East to the caves" "a distance of four *daings* from Mogök, south, a distance " of four *daings* to Hnamyit *chaung*, west a distance of "six *daings* to the Wabo *chaung*, and north a distance of "four *daings* to the Hton Bo *chaung*", which would apparently be a rather smaller area than that which afterwards was fixed in the Sittan Sayin in 1145 B.E. (1783 A.D.) in the reign of Bodawpaya, when the boundaries were described as follows: -

On the east three *daings* distance from Mogök to the rocky caves adjoining Momeik, on the west, to the Beinwin *kwin*, four *daings* distance from Mogök and adjoining Momeik. On the north to Ai Pok creek, north of Kyutnaing village. On the south to the Momeik creek bounding with Mainglön.

By the time of the annexation, however, these boundaries had gradually extended with the growth of the three *sos* or jurisdictions of Mogök, Kyatpyin, and Kathē until they covered what is practically the present Mogök Sub-division, stretching from mile 24 on the Tonga road to the west of Shwenyaungbin to Hsailong at the foot of Loichau on the east and from the Nampe *chaung* proper, abutting on Mainglön, on the south to the line of the Shwe-U Taung Hnitmadaw ridge on the north, protracted eastwards in an indefinite fashion across the Bernardmyo plateau, where the jurisdictions of the Kathē and Mogök *so-thugyis* interdigitated with that of the Möng Mit *sawbwas*. As will be seen from the royal order quoted above, the original *sos* or jurisdictions were those of Mogök and, Kyatpyin and from a *parabaik* in the hands of a former *so-thugyi* of Kathē, U Gaing, containing a royal order dated 999 B.E. (1637 A.D.) the position, privileges and duties of the local inhabitants may be described as follows:—It is laid down in pretty clear terms that the King intended that the

biggest and best stones should be his, by whomsoever found, and this was always insisted on. *Per contra*, the inhabitants of the *sos* of Mogök and Kyatpyin were to be protected from interference by any outsiders and exempt from charges and fees by officials, other than those specially put in charge of the Stone Tract. Various accounts are given of the original inhabitants after the Burmese took it over. The local people assert that the original settlement in these parts was that at Thapanbin, near Mogök, and its adjoining hamlet of U-Yin (since deserted) founded by people from Tagaung called 'Byaw'. From these original settlements offshoots spread to Luda (now deserted, near the present site of Kyatpyin) and thence to Thutegòn (south of Kathè), the original village which later became Kathè. The present village of Kyatpyin, according to all local accounts, only existed from 1200 B.E., but it is quite evident that there was an original village of Kyatpyin (probably nearer the site of Kathè) of much earlier date. Not only is that name referred to in the royal order of 959, but it is quite possible that the Caplan or Capelan of the early travellers should be identified with Kyatpyin. Accordingly, as stated in the *Upper Burma Gazetteer*, it is possible that the first settlers in Kyatpyin were pure Burmese sent by the King to commence mining operations under a special Superintendent. Another account, according to the *Upper Burma Gazetteer*, states that the original settlers were convicts deported from Uhmin, near Madaya in Mandalay District, and they were sent expressly to dig precious stones for Alaungpaya.

I have not been able to verify this story locally. The local accounts, of course, vary to a certain extent owing to the loss, in the times immediately following the annexation, of most of the *parabaiks*, in which the ancient history of these parts was recorded. But according to local tradition, assisted by references to such *parabaiks* as are still locally procurable, it would seem that the "Byaws" from Tagaung settled in an area immediately adjoining the present village of Kathè, and the name Byaw Ta-yauk Sho still bears witness to the presence of this people in these parts. (Another name for the same gully is given as Byaw-tanyaung-sho or "the gully where the Byaw put spikes"—one story beginning with conflicts between the Byaw and their neighbours the Shans and Palaungs, who began to gather at Thapanbin and other adjacent hamlets. From the usually peaceable nature of these folk this tale seems unlikely and the latter version of the name is

probably a corruption from the original "Byaw-tayauksho," as one of the first cares of any settler in these hilly parts would be to make a water channel both for domestic use and for irrigation.) Any way, the original settlement in the situation where Kathè now is, was known as Kyatpyin, the name being said to have been derived from Kyatpyin or "spread platform," this course being necessitated by the cold of the locality which made people light fires underneath the platforms on which they slept to keep themselves warm at nights. From the time when this tract was taken over from Möng Mit the local dwellers were regarded as *ahmudans*, or service men, and over them the King placed *sos* or governors. The name *so* occurs in the royal order of 959, and according to local tradition it was the business of the *so-thuyis* on behalf of the local inhabitants three times a year to present to the court certain local produce as *Sidaw-Mandaw* (Royal paraphernalia), in the same way as other districts of the kingdom presented other produce required for the use of the royal household, or of the princes or princesses who had the various districts to 'eat.' So far as this area was concerned the King appears to have kept it entirely to himself and no lesser personages were ever given claims over it. The regulation form of offering or tax consisted of one big ruby (technically known as *gaung*) which was to be worth one viss of silver; one lesser ruby (*pon*) worth 15 tikals of silver; 150 lesser rubies, each worth at least one tikal of silver, and one *tok* or bundle of miscellaneous stones for which no particular value was fixed but which ordinarily consisted of *gawmeik* or zircon, *okthapaya* or tourmaline, and *nila* or sapphires. These offerings were made thrice annually in *Waso*, *Thadingyut* and *Tabodwe*, and each of the *so-thugyi*s (of whom there were then only two, Mogôk and Kyatpyin) had to pay the same. It is not now ascertainable whether the two *sos* were formed at the same time, or whether the Kyatpyin official was appointed first and afterwards the Mogôk *so-thugyi*. But there is no question that local tradition points to Mogôk being a later settlement than that round Kyatpyin. Most local informants concur in stating that the people of Thapanbin and Uyin originally went to what is now the site of Mogôk to make paddy fields in the bed of the valley, and that owing to the difficult nature of the country, the journey outward and the return took them the whole day, so that they did not get back till evening closed in (*Mochôk* in Burmese)—whence the name *Mochôk*, corrupted thereafter to Mogôk. By

the time, however, that the royal order of 959 was proclaimed, Mogôk had evidently been established, and it seems probable, therefore, that the two *sos* were concurrently constituted, Kyatpyin taking in roughly the west of the stone tract, while Mogôk took the east portion, the dividing line running roughly from Thapanbin through the west end of the Mogôk valley proper. What happened before Bodawgyi's time is not certain, but apparently two *so-thugyi*'s went on submitting these regulation presents year in and year out, till in about the year 1142 King Bodawgyi considered that there were not enough local inhabitants to produce stones properly, and sent in a contingent Assamese captives known as *Hpyikathe*, i.e., supplementary inhabitants, who were made over to the Kyatpyin *so-thugyi* to be set to work. It was then that the first *gaungs*, or headmen having that special official designation, were appointed in these parts. They were appointed directly by the King and the original intention, so far as can be made out, was that they were to act as a sort of check on the *so-thugyi*'s, who were suspected of making a much better thing out of the ruby mines than the King thought fair. From this time dates the era of certain locally celebrated *gaungs* such as *Gaung U Tôk*, *Gaung U Sein*, and *Gaung U Ba* (whose name is still perpetuated by the hamlet of that name lying just east of Panma village). These *gaungs* received orders to take charge of so many households of captives each on the understanding, of course, that they produced stones, and over them was put a separate *so-thugyi* (distinct from the Kyatpyin man) who, though he was a Burman, appears to have been appropriately named Maung Ka The. His duty, to begin with, was to produce for the royal consumption the "*Hkuhnitmungaya*" or 500 stones worth seven viss of silver annually over and above the *Sidaw-Mandaw* above referred to. Within a short time it became necessary for Maung Ka The to have a defined territorial jurisdiction, and accordingly out of the Kyatpyin jurisdiction was carved for him an area containing Thapanbin, Pandaw, Namhpeik, Nahpet, Kin south and Kabaing. Presently, it appears that Maung Ka The, having to go down to Mandalay with his annual tribute of stones, agreed to travel with one U Nin, who was also proceeding to the capital as deputy of the then Mogôk *so-thugyi* with the Mogôk presents. *En route* Maung Ka The died at Singu in the Mandalay District, and, from the fact that U Nin was appointed Kathè *so-thugyi* in his place, it may be assumed

that he represented the combined offering as the result of his own efforts. He must have been a man of some force of character, for during his time he persuaded the King to add a large slice of Möng Mit territory to his charge.* In this way U Nin obtained a sort of semi-circle of country enclosing the Kyatpyin *so-thugyi*, and the partition of Kyatpyin village followed about the year 1200 B.E., the section north of the Ye-u-gyi *chaung* passing definitely to the Kathè jurisdiction and taking the name of Kathè, while the people who had lived to the south of the stream moved a mile or so further off to the south of Pingutaung and formed the present modern village of Kyatpyin under the *so-thugyi* U Yein Hpyu *alias* Po Htaung Ma, a Byaw. From that time on to the time of King Mindon the boundaries of the three *sos* or jurisdictions of Mogök, Kyatpyin, and Kathè remained more or less constant. But the various governors or *sos* in charge were appointed in the most haphazard and confusing manner. The officials were constantly being changed and supplanted by any one who could get the King's orders for the moment. At times some of them held sway over all three *sos*, at times, as in the case of U Myu, who is still alive and who has been consulted, they were given charge of two out of the three. So far as Kyatpyin and Kathè are concerned, no claim is made that any of the governors had hereditary rights to the position, though members of the same family were in fact appointed occasionally. Finally, it is said that, about five years after Mindon Min had moved into Mandalay, or about 1225 B.E., two intelligent *kalas* called Thabyit Za and Mokadet approached the King with the promise of 200 viss of silver (equivalent to 20,000 rupees) for the sole right of purchasing all the stones that came out of the stone tract. This sum was to be paid quite apart from the customary *Sidaw-Mandaw*, which had to be paid in by the *so-thugyis* direct. This action of course put the then *so-thugyis* on their mettle. Accordingly, very shortly afterwards, the *so-thugyis* U Byin of Mogök, U Tha Dun of Kathè, and U Chein of Kyatpyin joined together and offered to pay the King 300 viss of silver annually for the same privilege, only stipulating that the customary presents of *Sidaw-Mandaw* should cease. This apparently was

* The Male *Sehnit Ywa*, consisting of the following villages :—

Ondan, Nayagu, Nga-ka-Yin, Bawagon, Shwenyaungbin, Pindwe, Pinmaung, Thèni, Manton, Lapetchaung, Pyagyaung, Wabogyaung and Male (not Shwebo Male, but a small village east of Chaunggyi in the south of this district and near the Ubaw *chaung*).

agreed to by the King, and then Maung Tha Dun of Kathè went one better and promised to pay 600 viss or Rs. 60,000 annually on condition of being appointed *thon-so-kor* sole Governor of the whole stone tract. This started the decline of the locality. The area was naturally remote and not very populous, and in order to raise this large sum of money the *so-thugyi*, who had powers of life and death, began to oppress the villagers, with the result that they deserted their homes and moved into the neighbouring Shan States. In theory, as the matter was described to me, the *so-thugyi* could not arbitrarily take a man's stones away which he got by mining, unless they were of such a size as to be claimed on behalf of the King. Mining, also, was by custom free, and the *so-thugyi* could not compel any one to mine, nor could he prescribe any particular place where mining should go on. At the same time, he could and did demand that miners should give him the first refusal of all their stones, and a show of equity was made by allowing the owner of the stones to produce them before an assessor, who was of course a nominee of the *so-thugyi*. The wretched owner, in a terrible state of fright, did not dare come too near the exalted person of the *so-thugyi*, and sat at a distance while his stones were placed on the customary brass tray for the inspection of the assessor and the *so-thugyi*. The latter, while moving the stones about on the tray, would trace with his finger the approximate price which he thought fit to give, and the assessor promptly named this as the right price of the stones, which the owner had to take and be thankful. Appeals to any other authority, I am told, in those times were absolutely unknown, but the dissatisfaction caused by the *so-thugyi*'s action ended in the depletion of the villages. Just about or immediately after this time the Myingun rebellion took place, and, as a consequence of the disturbances following thereon, the destruction of Mōng Mit and Mainglōn, and the setting free of gangs of homeless men who had been driven to take to dacoity for their livelihood, the stone tract for a time became practically deserted, and for a year or so nothing was paid in to the royal coffers. Vigorous efforts were made to bring the people back, and arrangements were made whereby the three then *so-thugyi*s (Maung Hpan of Kyatpin), Maung Shwe Bin of Mogök, and Maung Tha Dun of Kathè, should divide equally between their jurisdictions the burden of the Rs. 60,000 which the King found it convenient to impose as a tax on the valley. Mogök, how-

ever, was far more prosperous than the other two areas, and the Mogök *so-thugyis* paid half the demand, the other two jurisdictions sharing the burden of the balance. The taxation meanwhile rose steadily. Stones are said to have been generally more plentiful and easy to obtain in those days, and from Rs. 60,000 the annual tribute rose to one lakh in the time of U Myu, till finally, when U Gaing became *so-thugyi* of Kathè, just before the annexation, the total demand on the three *Sos* had risen to Rs. 2,40,000, which spelt ruin. Had it not been for the annexation taking place about that time, as most persons consulted agree, the Stone Tract would have been once more deserted. Ever since the custom had started of making annual payments in lieu of the *Sidaw-Mandaw*, apart from specially good stones which were and had always been the King's perquisite, revenue was paid in in cash. The system adopted ultimately worked out as follows:—

Within the Stone Tract mining was absolutely free. The conditions were such that none but the hereditary people cared to mine, so there were no complications on this score. Any such stones as a man obtained he was at liberty to sell anywhere within the Stone Tract absolutely freely for whatever he could get to any one who chose to pay. But stones could not be exported from the Stone Tract for sale elsewhere, without certain formalities. The stones, or packets of stones, as the case might be, had to be produced before the *so-thugyi* of the locality. The weight and description were taken, and the packet sealed with the *so-thugyi*'s seal and given back to the owner. The owner had to produce the packet in Mandalay with the seal unbroken at the Royal Stone Mart or *Kyauk-Yondaw*. To insure this being done the *so-thugyi*'s submitted lists periodically to the officer in charge, while there was established at Kin village, which was the natural outlet from the mines, a Custom Office to see that no unauthorized stones were smuggled away. The price that the owner originally required was entered in the *so-thugyi*'s list. On arrival at Mandalay the seal was broken by the officer in charge of the mart on a day appointed by him for the meeting of buyers and sellers, and then the owner was allowed to make the best bargain he could with the various purchasers present. If a bargain was concluded the purchaser had to pay as tax 10 per cent. on the purchase price, while the seller had 5 per cent. deducted from his receipts for the same object. If the parties could not come to an agreement, the original owner could pay at once 10

per cent. on the valuation of his stone as given to the *so-thugyi*, when he was free to take it away and dispose of it as best he might. If he could not do this, and could not come to terms with the purchasers then present, the stone was sealed up again and retained until another day for inspection was fixed, and in due course a purchaser would be found. The privilege of collecting and retaining fees on these stones at the Royal Stone Mart was farmed out and the money obtained from this source was regarded as part of the total annual tribute due from the Stone Tract, and the three *so-thugyi*s jointly. The proceeds of the mart alone did not satisfy the total demand. The balance was obtained in the following fashion. The *so-thugyi*s collected an irregular cess, known as *mindaing*, of an uncertain amount at irregular intervals from the various villagers in their jurisdiction, according to what they thought the villagers could pay. This had no relation whatever to *thathameda* or to any land tax. It is true that then, as now, the inhabitants did to a certain extent cultivate fields. But the extent of their cultivation had no necessary relation to the amount of the demand made on them. A man working a considerable area of paddy was regarded as naturally better off than some of his neighbours, and would be asked to pay twice or thrice as much. But the increased demand was not made specifically on the ground of his having cultivation, but generally on the greater general prosperity of the assessee. This cess, however, alone did not suffice to yield the large amount demanded from the tract, and accordingly it became customary for the *so-thugyi* to compel the men who came up to trade as stone merchants in the tract to take advances of money from the proceeds of the *mindaing* alluded to above, and to pay a considerable percentage as interest to the *so-thugyi* for the compulsory privilege enjoyed. In Kyatpyin and Kathè this percentage is said to have never exceeded 30 per cent., while in Mogök it sometimes went up to 100 per cent., all, of course, for short-term loans, which had to be returned *plus* the percentage, whether the wretched ruby trader had made a profit on his transaction or not. It is stated that up to the year of the great rebellion, *i.e.* 1228, the country at large in these parts was wonderfully law-abiding and quiet. People could travel about with the utmost security and dacoits and robbers were unknown. After 1228, however, there was chaos. People were frightened to move, except in bands for self-protection, and even then they were armed. The road down to Thabeitkyin was infested by robbers and

the villagers in the Stone Tract were constantly exposed to sudden raids from Mainglon and Möng Mit, where the people had been driven to rob their neighbours for their livelihood. Finally, just before the annexation, things had come to such a pass that three local swash-bucklers, namely, Bo Aw at Thabeitkyin, Hein Kan at Wapyudaung and Paw Kwe at Shwenyaungbin, established a sort of convoy system to and from the mines, taking irregular tolls from travellers for safe conduct, which sometimes, it is said, amounted to as much as 10 rupees per traveller for the trip. At the annexation Hein Kan, being unable to resist the British troops, fled, but Bo Aw and Paw Kwe apparently were made head constables and set to work to police the road.

Archaeology.

The following is a list of the chief pagodas of historical interest in the district:—

Situation.	Name of Pagoda.	Remarks.
Myadaung	Paungdaw U.	It is situated at Myadaung, which is 20 miles to the north of Tagaung. It was built in 1098 A.D. by Alaungsithu, King of Lower Pagan, who made frequent progresses throughout his extensive Empire. It was renovated by Min-gaung, King of Ava, who reigned from 1401 to 1422 A.D., by Alompra in 1753 A.D., by a daughter of Bodawpaya in 1793 A.D., by the Myadaung <i>Wun</i> (U Pe) Mindinyaza Thamantasithu in 1877 A.D., and three years later by U Si, father-in-law of the <i>Wun</i> . On the pagoda platform are two inscribed stone tablets erected by U Si.
Maingdaing	Mosudaung	This pagoda is situated at Maingdaing, which is 27 miles to the east of Tagaung. It was built in 1758 A.D. by U San Ya, <i>Pyeso</i> or Governor of Maingdaing, which then consisted of 12 divisions containing about 42,000 houses. The pagoda marks the centre of an extensive agricultural tract of country, which was at one time the granary of the upper reaches of the Irrawaddy. Near it are ruins of other pagodas and <i>kyauungs</i> of an older date.

Situation.	Name of Pagoda.	Remarks.
Myadaung	Gawdama-paya.	This pagoda is situated about one mile to the east of Myadaung. Its antiquity is attested by the existence of clay votive tablets bearing Sanscrit and Bengali legends of the eighth and ninth centuries A.D.
Tagaung ...	Shwezigón	According to tradition this pagoda was built by Mingyi Maha, King of Tagaung, in 445 B.C.; 237,540 bricks were utilised in building it, each brick being contributed by a different household. The pagoda is situated within the walls of Upper Pagan. It has been renovated, and in 1902 a new <i>hti</i> was placed on it through the exertions of U Einda, <i>Gaingök Sadaw</i> , but an earthquake has since demolished the work of piety.
Do. ...	Zina-aung-gya-Shwe-bôntha.	This pagoda is situated at the north-east corner of the court-house compound at Tagaung.

Before undertaking an expedition to Pegu in Southern Burma in order to crush the growing power of the Talaings who had recently subverted the Burmese Monarchy of Ava Alaungpaya, founder of the Konbaung or last Burmese Dynasty, who had just been crowned at Shwebo as the overlord of the Burmese race, and had made a triumphant entry into Ava, visited the upper reaches of the Irrawaddy and secured the alliance and material support of the powerful Shan Chiefs of Möng Mit, Bhamo, Mohnyin and Mogaung. In the course of this visit, in 1754 A.D. (1115 B.E.), he held a durbar at Tagaung, and on the site of this pagoda received the homage and submission of the *Sawbwa* of Möng Mit. The pagoda had originally seven stone umbrellas and seven griffins.

The name of the pagoda is said to be derived from the seven days of the week, thus :—

Zi or ဇ means Tuesday for အေတာင်းပြာ- အပို။

Na or န means Saturday for အေတာင်နေ့- ဝါဒ။

Aung or အောင် means Sunday for အ-ထန်းနှေ့။

Gya or ဂျောင် means Monday for အောင်သား- တန်းထဲ

Shwe or ရွှေ့ means Wednesday for ရောင်း-ရွှေ့ထဲ။

Bôn or ဘုံ means Thursday for ပေများမှ- ပြောသာပေး။

Tha or သာ means Friday for သ-ထဲ-သောကြား။

Ruby Mines District.

—the idea, as explained by the people of the locality, being that all persons born on whatsoever day of the week might worship at and bear the pagoda in mind, as the spirits controlling each of the seven days had the pagoda under its special care daily, whence also the seven umbrellas and the seven griffins for the use of spirits.

Situation.	Name of Pagoda.	Remarks.
Tagaung ...	Shwezadi	According to tradition this pagoda was built by Asoka in the third century, B.C. It is situated close to the Myoök's house at Tagaung. Its shape and architecture bespeak its ancient origin.

Simple rules have been drawn up for the administration of the Trust Fund of the Shwezin Pagoda at Tagaung, to the Gawdama pagoda at Myadaung, Paungda-U pagoda at Myadaung, Shwemale at Kyahnyat, and Shwemyin-U at Kyahnyat, which are the chief places at which the annual festivals of the district are held. The most celebrated local festival, however, is that in connection with the Shwemyindin Pagoda at Möng Mit which annually attracts vast crowds from the district and the neighbouring Shan States.

Other pagodas which, though not of special historical interest in the history of Burma, are yet of local importance, are :—

Situation.	Name of Pagoda.	Remarks.
Mogök ...	Shwegugyi	This pagoda was built in Dhamathawka Min's time. It is said to have been erected upon the spot where the elephant which brought a tooth, some hair and some bones of Gautama knelt down. The Sudaungbyi pagoda built about the same time owed its origin to the same incident.
Kyatpyin ...	...	A very conspicuous pagoda on the very summit of Pingutaung, specially remarkable from its isolated position and the immense amount of labour which must have been involved in carrying the materials to such a height.

The Superintendent, Archæological Survey, states as follows:—

"So far only two Burmese inscriptions relating to Tagaung have been found; one has been preserved at the Shwezigôn Pagoda. It records the dedication of a monastery and was set up in 1354 A.D. The other is at the Arakan Pagoda Mandalay; it was erected by King Alaungpaya after the construction of the Shwebôntha Pagoda at Tagaung in 1753 A.D., and the statement regarding the finding of a Sanskrit inscription of 416 A.D. at page 369 of Bird's 'Wanderings in Burma' is wrong."

Inscriptions.

CHAPTER III.

THE PEOPLE.

According to the accepted tradition of the Burmese race this district was the scene of the original immigration of that Tartar tribe which, descending at some indefinite date before the sixth century B.C. from the direction of Tibet towards the foot of the Himalayas, had been driven by attacks from the west to migrate in the direction of the Irrawaddy valley. All accounts agree that they came from the north-west, but whether they came *via* the Hukawng valley straight down the Upper Irrawaddy, or *via* the Chindwin valley, is uncertain. They founded their first important capital at Tagaung on the east bank of the Irrawaddy. (Further details will be found under the head Tagaung in Chapter XIV.) In process of time the original settlers were surrounded and engulfed by incursions of the Shans, who in turn, after various vicissitudes, were subjugated by Alaungpaya and incorporated in the Burmese Kingdom as it existed just prior to the annexation. Consequently, the riverine tract of this district, including the whole of the Tagaung Township and the major portion of the Thabeitkyin Township with the exception of the south-east portion thereof (which until comparatively recent times formed a portion of Möng Mit State), bears a distinctly Burmese impress, the people speaking and living just like the Burmese elsewhere, though of course, as a result of the previous admixture with the Shan invaders and as a result of their close proximity to the Shan State of Möng Mit, a few of the people can understand Shan and occasionally affect, especially the males, Shan dress.

Burmans.

Shans.

The Shans proper, including that portion of the population in which the result of the admixture is predominantly Shan, are found in the Mogök Township and in the south-east corner of the Thabeitkyin Township. The original inhabitants of the Stone Tract were "Byaws" from Tagaung. They were followed by Shans and Palaungs. After the annexation of the tract from the Möng Mit State the King, no doubt, sent up a certain number of Burmese settlers. There are now but few Burmese in the Ruby Tract, the Shan influence being predominant. The explanation given by the local people of this fact is that, during the time of Bodawpaya, there was a revolution and disturbances resulting in famine and frequent inroads from neighbouring territories ; and for three years the Ruby Tract was deserted, the people flying to Theinni and Möngmao on the Chinese border. When the court at Amarapura received news of the exodus, royal messengers were sent to different places in the Shan States to seek the people out and bring them back, but in the interval most of the refugees had intermarried with Shans, with the consequence that their descendants had practically become Shans.

Kachins.

In the district proper there are only a few dozen Kachins living in a couple of small hamlets mixed with Shan-Burmans.

Lishaws.

The Lishaws are now found on the Bernardmyo plateau alone. They comprise a settlement of seven villages with a total population of 1,350. They settled in this area some years before the annexation, coming from Chinese territory. According to their usual custom, they selected the highest summits for their wasteful energies and, before their activities were stopped by the formation of Forest Reserves, they had cleared a large portion of the Bernardmyo valley of virgin forest and left it a mere treeless savannah of coarse grass. During the last ten years they have been forced by the restrictions on their *taungya* cutting to adopt other means of livelihood, and have embarked on the cultivation of potatoes, which was first introduced when a British Cantonment was established at Bernardmyo. They have also been forced by circumstances to take to ordinary *lè* cultivation, following in this respect the example set them by their Palaung neighbours in various portions of the district, with the result that an increasingly large area of the plateau is coming under terraced cultivation, while the whole of the valley of the Upper Ingyauk which drains the plateau is now an extensive paddy field. During 1907-09 an extraordinary wave of Lishaw immigration suddenly

swept from China into this district and Möng Mit State. Large bodies of them came in and seized prominent positions on the border between Mogök and Möng Mit and in the Kodaung, and it was with some considerable difficulty that these unauthorized intruders were dislodged. The incursion, however, has now been stayed. These immigrants were of no economic value and absolutely useless as a revenue producing community, while the damage done in a short time to the forest was enormous, and hardly to be remedied within a long series of years. As they select by choice the most isolated and inaccessible spots it was difficult to control their actions.

It is not necessary here to describe the Burmese, the Shans, the Kachins or Lishaws, in regard to whom there is a considerable amount of literature and in reference to whom the Upper Burma Gazetteer and the Census Reports of past years may be consulted.

A monograph on the Palaungs of the Kodaung has been *Palaungs* prepared by Mr. A. A. Cameron.

In the district proper they are confined entirely to the hilly tracts, that is to say, the Mogök Subdivision. There are none in the riverine portions, and the offer of every inducement to occupy and cultivate fertile areas in the riverine tract, with remission of revenue for long terms of years, has met with no success. When the first pressure of the slump in the ruby market began to be felt in the stone tract during 1908-09, a few Palaungs did migrate from the neighbourhood of Kyatpyin to the Mohnyin valley in Katha District, where culturable areas were reputed to be had for the asking within easy reach of the railway, but the experiment proved disastrous; large numbers of those who migrated died and the survivors returned broken in health and spirits to act as a standing warning to their neighbours against rash enterprises. The Palaung is an orderly and industrious person who deserves every encouragement, if he would only abandon his *taungya* proclivities and concentrate on terrace cultivation or other similar pursuits. Those in the Mogök and adjoining valleys, of course, generally take to mining, with its constant vicissitudes of fortune, and generally speaking may be regarded as poor and improvident. There is however one shining example in the case of the Palaung village of Kyaukkyan, the inhabitants of which entirely eschew mining and confine their energies to trading by means of bullock caravans between the Shan States and this district and to cultivation, as a result of which they enjoy a prosperity

Towns and large villages. unequalled anywhere in the outlying villages of the mining tract.

There is only one area regarded as a town for the purposes of the census, namely, Mogôk. This area is really a collection of twelve independent village tracts under the Village Regulation, each village having its own headman.

Gyawtaung, Taungmachin, Taungywa, Mogôk Myoma, Shandaw, Shawliwaing, Tayokdan, Kyudawmi, Kontha, Satongon, Asheya, Peikswe

The area included within these village tracts has been demarcated and defined in Revenue Department Notification No. 42, dated the 15th June 1910.

CHAPTER IV.

AGRICULTURE AND IRRIGATION.

General Features. Speaking generally, the Ruby Mines District cannot be regarded as fertile. The Mogôk Township and the southern portion of the Thabeitkyin Township is a mass of hills where cultivation generally is carried on only in suitable valley bottoms, while it is only in the extreme north of the Tagaung Township that a continuous stretch of land is found that might be regarded as arable if it were cleared of jungle. In this locality, unfortunately, the arable shelf lying along the left bank of the Irrawaddy is liable to capricious rises of the Irrawaddy, which are the despair of the cultivator, and periodically sweep away the whole crop in a few hours. There being no cadastral survey, any attempt to give figures of areas under cultivation is useless, as it would be misleading. The average annual outturn in baskets of paddy (*kaukkyi* or main crop only) for the district for the last five years is estimated as follows:—

Mogôk Township	annual yield	40,000	baskets.
Thabeitkyin	" " "	50,000	"
Tagaung	" " "	20,000	"

but this must be regarded as only a rough approximation, as it depends entirely on the *thugyis'* assessment rolls,

which are notoriously incorrect and under-estimated, and in estimating the risk of famine it has been customary to increase these figures by 25 per cent.

Nevertheless, it may be accepted as certain that the district can never raise enough paddy to feed the local population, and in fact the entire district, whether it be the highland portion or the riverine tract, depends to a very large extent on imported food stuffs.

The mining centre in the Mogôk Township has to be fed by paddy imported on the north from Möng Mit State, on the south from Mainglôn, which is a part of the Hsipaw State, and, more especially since the completion of the tonga road and the commencement of motor traffic, by rice imported through Thabeitkyin, both from Mandalay and from up river stations. The Tagaung and Thabeitkyin townships depend mainly for their supplies on the surplus crop exported from the Meza *chaung* drainage of Katha, and to a small extent on exports from Möng Mit State through Twinnge.

Cultivation, as elsewhere in Burma, may be divided into wet and dry crops, the wet crop being paddy. Paddy cultivation is of the ordinary three kinds:

- (a) Lowland or permanent cultivation of periodically flooded areas (*lè*).
- (b) *Taungya* or hill cultivation.
- (c) Cultivation of hot weather rice.

This is confined to the northern part of the Tagaung Township, in the partially submerged areas left by the retreating floods of the Irrawaddy inside the high edge of the bank.

Lè paddy is grown throughout the district in small patches wherever level spots can be found in the valleys. These patches are distant, in some cases, miles from each other, and it may be taken that wherever there is a fairly good sized patch of level ground there a village springs up whose size, outside the mining centres, is conditioned by the extent of the land available for cultivation.

Terraced cultivation, after the fashion in use among the Palaungs elsewhere, is to be met with, but not to the same extent as in the Kodaung. The preparation of terraces is a laborious process and offers few attractions in the mining area. So far as the Mogôk Township and the south half of Thabeitkyin is concerned practically the whole of the *lè* area may be regarded as irrigated. The rainfall is constant and abundant, and the fields obtain water without difficulty from the streams on either bank of which they lie. In some

Ruby Mines District.

cases water channels have been dug to catch the rainfall from neighbouring gulleys, but such artificial irrigation works as exist are of no great importance, are constructed by the villagers entirely with their own resources and are in no way looked after or subsidized by the State. Weirs are erected in some places but most of them are swept away each rains. No settlement has ever taken place in the district, and consequently it is not possible to state the average size of holdings, but from the nature of local circumstances these are usually small.

In the Mogök Township a certain amount of friction occasionally arises between miners and cultivators. It is during the rains that mining operations can be best carried on, water being then readily obtainable for hydraulicing. But the waste water from the mines carries away with it a light yellow or reddish silt, which spreads over the cultivated fields lower down and destroys their fertility, forming a sort of hard crust when dried. In the Thabeitkyin and Tagaung Townships, also, there used in years past to be a certain amount of friction with the various companies holding rights to extract timber, the villagers complaining that their weirs were damaged by floating logs. Of late years, however, owing to the companies' main work being transferred to Möng Mit State, the causes of friction have been diminished. From crop cutting experiments conducted during the years 1908—14 an attempt has been made to estimate the average outturn of paddy. The system has, however, only been applied to a few villages; the fields in hill valleys vary enormously in fertility, soil, aspect, irrigation facilities, all being different; and the series of years is too short to give reliable data. For statistical purposes 30 baskets an acre for low land and 40 baskets for *taungya* cultivation have been the assumed outturns, and it is not possible to give any more accurate figures.

The normal price of rice in Mogök is Rs. Rs. 3-8 to Rs. 4 a basket. In 1902, owing to local floods, it ran to Rs. 10. Interruptions to communications with Mainglôn and Möng Mit forced the price to Rs. 8 in 1905 and 1908, and in 1912 general floods at harvest time destroyed large quantities of grain, and prices rose throughout the province, reaching Rs. 8 a basket in Mogök.

Some of the varieties of paddy appear to be particularly brittle and require to be roughly milled in a hand-mill composed of sections of a tree trunk, so as to separate a good proportion of the outer husk. The residue is then winnowed and pounded in the ordinary *maung*. The grain

could not, it is said, be cleaned by the latter process alone without so much breakage as would make it useless as food. Until recently the cultivation of paddy was a minor occupation, the inhabitants looking primarily to mining for their support except in certain specially favoured villages, lying in the lower and deeper valleys, such as Nyaungdauk, Laungzin and Kin, where the distance from the Mogök valley and the unusually large area favourable for paddy cultivation encourage a resort to agriculture in preference to mining. Of late years, and notably since 1909 in the Mogök valley, there has been a tendency to increase the area under *lè*. Fields which had been lying untilled since the annexation have been brought under the plough; but the possible area within which an increase of *lè* can take place is far too limited and inaccessible to serve as a sufficient support for the local population.

By far the larger number of villagers outside the Mogök valley depend to a great extent on *taungya* cultivation.

With regard to *taungyas*, everything is being done, by means of the formation of forest reserves and the closing of areas to this form of cultivation under section 19 of the Forest Act, to turn the attention of the people to other methods. The colony of Lishaws which settled in the neighbourhood of Pyaunggaung some years before the annexation soon cleared the major portion of Bernardmyo plateau of everything but grass. The Forest Department only intervened in time to save a portion of the teak forest round the peak of Taungme which stands on the south edge of the plateau. For some years after the arrival of the troops at Bernardmyo, the Lishaws eked out their earnings from opium smuggling by the cultivation of potatoes, but the activities of the Excise staff, the gradual deterioration in the quality of the potatoes and the closure to *taungya* cultivation of large areas lying between the plateau itself and the level of the Möng Mit valley, have driven them to the necessity of terracing for paddy, and this they have done with considerable success. In other parts of the Mogök Subdivision where the villagers, chiefly Palaungs, have not the same facilities for extending *lè* cultivation, attempts have been made to deal with the *taungya* question in different ways. In the first place, experiments are being conducted for the introduction of *Maibao*, a quick growing alder which it is hoped will enable the rotation period of *taungya* clearings, and therefore the area required for the subsistence of the population, to be reduced. At the same time every effort has been made to induce migration to the riverine

Cultiva-
tion on
hill sides.

portion of the district by specially favourable terms in regard to land revenue and *thatthameda*. This latter inducement so far has failed to act to any appreciable extent, as the hill dwellers cling to their old homes. But the decrease in prosperity of the district at large owing to the slump in the ruby market, which at present (1914) shows no signs of brightening, cannot but compel the residents of the circle of *taungya*-cutting villages, who depend on the mining villages to take their produce, to move elsewhere. Small patches of maize are grown here and there on the hills by the natives of India, chiefly Gurkha herdsmen, who have been filtering into the district for the last few years. Their example is a valuable one for the local population, who, in spite of constant exhortation, still pin their faith on the expected revival of the ruby trade.

Recently, even under the pressure of real want caused by the collapse of the market during the war, the utmost difficulty has been experienced in persuading able-bodied men, who are earning nothing here, to go as far as the Ye-u canal, where excellent wages are to be had throughout the cold weather. A strong distaste for any work which is unflavoured by excitement, an unshakeable belief in the recovery of the market, and a complete immunity from scruples with regard to living on other people's earnings all combine to tie the native miner to the hills.

Wet
cultiva-
tion,
paddy,
lè.

Lè cultivation is found for the most part in the riverine tracts of the Thabeitkyin Subdivision, to which area also the practice of *mayin* is entirely confined. In the Mogök Subdivision and in the southern part of the Thabeitkyin Subdivision, *lè* cultivation is scattered in small patches here and there where the conformation of the valleys permits, usually in the vicinity of some village. In this area the rainfall may be regarded as pretty certain, and the crops are usually successful, though insufficient to support the people throughout the year.

Mayin.

The *mayin* method is practised most extensively in the north of the Tagaung Township along the edges of the shallow patches of water, formed on the shelf that lies between the foot of the high Inding forest and the present bank of the Irrawaddy, which are annually fed by the overflow of the river, and which are cut off as the water recedes at the approach of the dry season. These depressions form the lakes where the main fishing industry of the district is carried on, and it is by means of baling therefrom that the irrigation necessary for *mayin* crops is provided.

In the riverine portion of the district the surface soil where *lè* and *mayin* cultivation is carried on is usually soft, with the result that *tès* or deep share ploughs are hardly ever used. The surface soil, to a depth of 4 to 6 inches, is broken up with the *tun* (a 4-toothed harrow) from four to six times according to the nature of the soil, and finally, just before sowing, the ground is prepared again once or twice with a 7-toothed harrow. Ordinarily speaking, *kaukkyi* is sown in the months of *Nayôn-Wazo* in nurseries, after the soil has been worked up into a fine tilth. The first rains usually fall in *Wazo* and *Wagaung*, and the seedlings are picked up and set out in clumps in the fields from about the middle of *Wagaung* up to *Tawthalin*. Thereafter, according to local cultivators, if a really good crop is to be ensured, three good showers are requisite; one in the *Lazan* of *Tawthalin*, one at full-moon and one in *Labyigyaw*. These showers are required after the planted out paddy has taken root and has set itself firmly in the ground. The first showers are requisite to fill the fields, and directly the plants are fairly well set the *kazins* or bunds are opened and every effort is made to keep water off the fields, till the surface soil begins to dry, crinkle and split. If this is not done the roots of the paddy rot and the crop deteriorates.

Reaping starts in *Pyatho* on the lowest lying lands near the river, in *Natdaw* on the higher and better drained slopes, and in the Mogôk Subdivision from one to $1\frac{1}{2}$ months earlier according to the position of the fields. As regards *mayin* the nurseries are usually sown in *Natdaw* and the seedlings planted out in *Pyatho* and *Tabodwe*, while reaping takes place in *Tagu* and *Kason*.

In the Mogôk Township, in consequence of the constant nature of the rainfall coupled with the comparatively insignificant total outturn of paddy, the variations of the latter from year to year are not considerable or important. In the riverine portions of the district during the last twenty years in the case of *kaukkyi* full crops were obtained in the years 1896-97, 1900-01, 1902-03, 1906-07, 1908-09, 1910-11, and 1913-14.

In one year only (1905-06) can the crop be said to have failed generally, while in four years (1895-96, 1898-99, 1901-02, and 1909-10) the crops fell below half the average outturn, so that, speaking generally, the cultivators in this district are moderately fortunate.

Failures are due just as often to untimely rises of the river as to scanty or (what is as bad) irregular rainfall.

Methods of cultivation.

Variation in seasons.

Method of cultivation in the high valleys.

The surface soil is considered as the most valuable and is worked well into the subsoil, which is turned up with the *tè*. Ploughing varies from 3 to 6 inches in depth and is repeated half a dozen times, when the ridges are broken up with the *tun* till the surface is even. Operations commence in *Nayón* in the lowlying lands and a month earlier in the higher fields, nurseries being prepared and planted at about the same time, the seedlings being transplanted in the middle of *Wazo* for the earlier and at the beginning of *Wagaung* for the later varieties. The former come under the sickle as early as the beginning of *Tasaungmon* and the harvest continues into *Natdaw*.

For a good crop steady rain is required from the beginning of *Wazo* to the beginning of *Thadingyut*. After this, occasional showers are beneficial.

Kaukkyi is the principal crop, one variety of this (*Kaukhnyin*) being grown in small quantities near most villages, where it is baked in bamboos and sold in the bazaars as *paungdin*.

Irrigation.

There are no large irrigation works in the district. Practically, all the *lè* cultivation, in the hilly portion, *i.e.*, the Mogök Subdivision and the south of the Thabeitkyin Subdivision, may be said to be irrigated by trenches dug along the lower slopes of the hills at the foot of which the fields lie, either to intercept the rainfall off the slopes or to tap the upper waters of the streams. The latter method is also adopted in the Thabeitkyin Subdivision in the case of the larger streams that flow into the Irrawaddy from the ridge of hills running north from Shwe-u-taung to the Shweli, and in those parts necessitates the erection of weirs of considerable size and strength. These local irrigation systems are entirely in the hands of the villagers, and the weirs require almost yearly renewal.

Varieties of paddy.

Some 30 varieties of *kaukkyi* paddy are grown in the Thabeitkyin Subdivision. All except *mathalè* are soft, easily pounded grains. The varieties known as *naung-htu* and *ywa-le* are said to be slightly sweeter than the others:

Of *mayin*, the following varieties are grown: *kauk-san mayin-ni*, *mayin-pyu*, *ma-kauk*, *daw-wet*, *paung-ba-laung*, *hhaw-pe*. Of these the most valued for eating purposes is said to be the *ma-kauk*.

Taungya paddy.

This method of cultivation is practised throughout the district, there being a considerable amount of hilly country in every township. The jungle is ordinarily cut down between the months of *Pyatho* and *Tabaung*, *i.e.*, from January to March. Young trees and undergrowth are felled

together, while the bigger trees are left standing, only their branches being cut to avoid the labour of moving the logs. The jungle thus cut down is left to dry till about the end of April (*Tagu*), and in that month or *Kason* it is fired. All half burnt timber is removed, and as soon as the first showers fall (in May or June) the crop is sown. Small holes two or three inches deep and about 6 to 8 inches apart are dibbled by means either of a pointed piece of bamboo or wood, called *sudok*, or a spear head fixed on a long bamboo shaft, called *su-gwet*, the object of the long shaft being to enable the man who wields the instrument to make holes on a slope as he moves along. Women usually do the actual placing of the seed grains in the holes. Between 5 to 10 seed grains are dropped in each hole. About 20 to 25 days after the sowing, when the plants are 8 to 10 inches high, the ground is hoed and weeded. Periodical weeding then takes place from time to time as required, the number of these operations depending on the rainfall and the quality of the soil, and the crop is reaped, if it is of the *kauksaw* type, about the full moon of *Thadingyut*, and if of the *kaukyi* variety at the beginning of *Nataaw*. Ordinarily speaking, a *taungya* is only cultivated for one year, though in exceptionally good situations, where the land has not been grown over too thickly with bushes and weeds after the first year's cultivation, it is sometimes cropped two years in succession. Thereafter the land has to be left fallow for a term of years according to its situation. In Mogök Subdivision the period of rotation is on the average about 8 years, while in the Thabeitkyin Subdivision, owing to the slower reproduction of jungle under a scantier rainfall, the average is about 10 years.

The abandoned area soon becomes densely covered with weeds and coarse grasses, among which are seedlings of the commoner species of trees in the surrounding forests. These weeds and grasses are sooner or later suppressed by tree-growth and the area, if left fallow sufficiently long, eventually reverts to the type of forest which prevailed before cultivation commenced. Considering the amount of labour expended the yield is poor, but no reliable statistics are available, and of course a very great deal depends on the soil and aspect.

Under this system of cultivation, unless the land is left fallow for a reasonable period, tree growth is eventually replaced in the higher hills by coarse grasses. The surface soil, not being sufficiently protected, is quickly washed away by the heavy rainfall and the streams, instead of

remaining perennial, are gradually converted into hill torrents.

The extent to which the rainfall is influenced by disafforestation has not yet been determined, but there can be little doubt as to the necessity for protecting the forests at the headwaters of all streams for the conservation of the water-supply. Accordingly, every effort has been made to save what is left of high tree jungle at the sources of streams; all immigration by Lishaws, who are the greatest offenders in this respect, has been stopped, and every inducement is made to the existing inhabitants to move from the tops of the hill slopes down to the valleys and take up permanent *lè* cultivation.

The varieties of paddy usually sown in *taungyas* are as follows:—

Gyochi, wethali, ketket, ngathale, chido, kaukhlut, kauknunan, kauhangyi.

Miscellaneous cultivation. The amount of cultivation of food crops other than paddy is insignificant. The chief crops cultivated are sessamum, maize, potatoes and peas. Wheat and gram have been grown, but owing to the want of a proper market the cultivation of these has ceased. Sessamum is grown, mostly in the Thabeitkyin Subdivision, and is not found at all in the Mogök Subdivision; while maize is most extensively cultivated in the uplands round Mogök, especially by the natives of India and Gurkha immigrants whose huts dot the slopes about the Mogök valley. Potatoes are grown chiefly on the Bernardmyo plateau by the Lishaws, who were driven to this form of cultivation by the restriction of the areas within which they could continue *taungya* operations. Potato cultivation was originally introduced by the troops who occupied Bernardmyo in the early years of the annexation but the stock has deteriorated. Peas—*pegyi* of two varieties and *pebyugale*—are grown almost exclusively in the Thabeitkyin Subdivision. This crop is sown in October and November on the low lying alluvial soil left by the retiring floods of the Irrawaddy and on the islands, and is usually gathered in March. Tobacco is also grown in small quantities on these alluvial lands. Wheat has been grown both in the Yebu valley near Mogök and right down in the plains of Thabeitkyin near Daungbôn. Sessamum occurs on the low lying *yas* of the riverine tract.

Fisheries. The most important fisheries in the district are those in the main channels of the Irrawaddy and Shweli, and the long string of lakes formed by the spill of the Irrawaddy into the depression which lies between the bank of that

river and the watershed of the two rivers to the east. In the height of the river floods, there is an unbroken stretch of water filling this depression from the Shweli south as far as Tagaung. As the river falls, only the deeper portions retain water, and these constitute the inland fisheries of the district, with their main channels still connected with the Irrawaddy.

About September, when the floods subside, the fish make for these channels, only to find them blocked by *sès* or weirs, in the openings of which are placed *hmyôns* or traps, which account for the main catch of the year. Later, many of the channels dry up completely. The method of procedure then varies according to the depth of the water. In deep water drag or casting nets are used, sometimes right up to the time of the next rise of the river. In shallower *ins* the fish are driven into a restricted space and surrounded by screens, and when there is little but mud left the survivors are caught in *saungs* or conical baskets. The catch in the inland fisheries consists mainly of—

(1) *Ngatwe*, (2) *ngamyin* (these two take the lead when the river falls), (3) *nga-thaing*, (4) *ngagyin*, (5) *ngalu*, (6) *ngale*, (7) *nga-byet*.

The success of a fishery depends mainly on the ability of the lessee to get his weirs fixed before the *nga-thaing*, which is valuable, has escaped into the main river.

The main channel fisheries include a certain number (in the Thabeitkyin Township) called *yebo*, in which the methods employed during low water resemble those described above.

The *myityo* fisheries proper are fished in various ways according to the state of the water, and in September operations are suspended pending the closing of the weirs at the outlets of the inland fisheries, at which time it is undesirable, in everybody's interests, that the fish should be disturbed. When the *sès* are closed and the river falls fishing is recommenced, with nets or traps according to situation. *Ngabat* is the most valuable fish, being either made into *ngapi* or salted. *Nga-thaing* is also prized, either smoked or as *ngapi*. Large fish are frequently caught with hook and line, the hook being either live baited (e.g., the *ngahmyadan*) or hanging free outside a basket of bran or oilcake (*taunggyin*). For some years the fisheries of the Tagaung Township have been under the control of the Deputy Commissioner, Katha, to whom they are more accessible. This arrangement also ensures uniformity of policy in dealing with the main Irrawaddy fisheries.

The only stream of any importance so far as fish are concerned, in the Mogôk Subdivision, is the Nampé, which forms the boundary between this district and Mainglôn (Hsipaw State). A license was issued for a screen near the junction of the Kyauktalôn stream in 1905, but permanent obstructions have since been refused. It should be a fine angler's stream but the results are disappointing.

Economic position of the people.

In general, it may be said that in the hilly portion of the district no considerable extension of cultivation is possible, and the prosperity of the bulk of the population depends on the ruby trade. In the plains there are large tracts awaiting the plough, but agriculture suffers from the competition of the timber trade. Whenever either the ruby or the timber market fails, there are loud outcries from the people that they are on the verge of starvation. The inhabitants of the stone tract are particularly sensitive to ill fortune, and no doubt the poorest classes—the dependents who, subsist comfortably on the profits of others in good times, and the "Kanêse" women who often support a family (including the husband) by the sale of the small stones washed from refuse gravel—do suffer considerably. But the outcries of the able-bodied male population need not be regarded too seriously. To start with, they have the strongest disinclination to any sort of labour other than mining. With the greatest difficulty, and only after the receipt of liberal advances and a promise that their women folk would be provided for, small gangs of terror-stricken men were persuaded—to all intents and purposes bribed—to accept work on the Ye-u canals and on girdling and creeper cutting operations in the forests. This was at a time when the ruby trade was almost at a standstill owing to the war and considerable numbers of the people were on half rations of rice. In a short time the travellers returned and said the work was too hard. Local work on roads was hurriedly commenced, and advances of money and rice made to the workers. With the first faint signs of a revival of the stone market they abandoned the work, which had to be given out on contract. Similarly, the trade in unclassed timber in the riverine villages suffered severely from the stoppage of credit on the outbreak of war, yet neither the Forest Department (which pays Re. 1 a day) nor the Bombay Burma Trading Corporation Limited were able to secure labour in the forests other than Kachins. For the benefit of conscientious and tender-hearted officials it may be placed on record that, though inherent laziness and an inborn terror of any climate but their own may operate to retard emigration,

tion amongst the miners almost to famine point, all that is necessary is to indicate where work is to be had and to guard against the manipulation of the local rice market. A man who normally spends his day either in the discovery of precious stones or in the expectation thereof requires something more than the prospect of hunger before he will face such prosaic tasks as shovelling common sand or hacking jungle.

Eloquent deputations of well fed *pawlans*, disguising self-interest under the mask of philanthropy, will enlarge on the inevitable sufferings of the labourer in the mines, and (if the reduction of the license fee is strictly excluded from discussion) assert as an incontrovertible fact that the miner dies if he goes elsewhere, and prefers to die at home in a congenial climate. The Deputy Commissioner contemplates the prospect, the countryside littered with emaciated corpses, skeleton children, dumbly reproaching him with his failure to raise the price by cheapening production, then exposure, statistics, enquiries, resolutions, and official extinction. If he is wise he will retire for a month to the most inaccessible parts of the district. On his return, he will find that even the laziest has discovered a distant relation in Mainglön or Möng Mit, and that what he mistook for the absolute immobility of labour was only exceptional obstinacy and a distaste for ordinary work almost amounting to a passion.

CHAPTER V.

FORESTS AND MINERALS.

The Ruby Mines Forest Division, as at present constituted, includes the whole of the Ruby Mines District with the exception of the small area which lies west of the Irrawaddy, and also the whole of the Möng Mit State with the exception of a small section within the south watershed of the Sinkan *chuang* belonging to the Bhamo Forest Division, which contains the Mohlaing and part of the Mainghein and Si-U reserves. Forests,

The control of the forests both in the Ruby Mines District proper and in Möng Meik State being centred in one Divisional Forest Officer with headquarters at Möng Mit, it is impossible to treat of them separately. The receipts are amalgamated for the purpose of the returns, and the expenditure on staff and control is dealt with under one head.

History prior to annexation.

It was the forests of Möng Mit State that first attracted attention and were first exploited. It is said that during King Thibaw's reign Hkan Ho, the father of the present *Sawbwa*, delivered annually to the Kin Wun Mingyi at Mandalay 100 teak logs as a customary present for the palace. One Maung Mun Taw had been granted by the King the right to extract teak from the forests now included in the Lower Shweli and Thabeitkyin ranges, Nayôk on the Shweli river being the eastern boundary of his concession. For this privilege he paid two lakhs a year and Rs. 70,000 in respect of other forest produce, but he enjoyed no monopoly, at least in practice, for our officials found the Kachins extracting teak, entirely free of revenue, alongside his foresters.*

On all such teak felled within 9 miles of the Shweli river Maung Mun Taw claimed a royalty of 20 per cent. *ad valorem*, and he occasionally sublet his nominal rights; but the claim was disputed by the villagers and abused by Mun Taw's representatives, one of whom was murdered in 1884 "with the King's permission" and two others were driven out of the country by the local *Sawbwus*.† Maung Mun Taw himself, who also had concessions in the Bhamo District, died in 1889, his partner Maung Bauk went bankrupt, and the British Government were relieved of a somewhat embarrassing inheritance.

In what is now known as the Myadaung range, that is, the lower portion of the Tagaung Township, no forests were leased during the time of the Burmese Kings, but the local villagers were allowed to work teak where they liked, subject to payment of a floating fee of Rs. 2-8-0 per raft on arrival at the revenue station of Sabenago and an *ad valorem* duty of 10 per cent. on arrival at Mandalay.

In the Mogôk range, that is to say, what is now the Mogôk Subdivision, no forests were leased. They apparently were divided up among the villagers and timber and other forest produce could be extracted with the permission of the village headmen.

The whole division is now (1914) divided into 8 ranges, 4 in charge of Rangers and four (Thabeitkyin, Mogôk, Mo-meik and Wainglôn) in charge of Deputy Rangers. Five of

Present constitution of the Forest Division.

* Deputy Commissioner, Myadaung's letter No. 665 -9P. of 19th October 1888, to Commissioner, Northern Division.

† Note by Mr. G. W. Shaw accompanying letter No. 235-11-A., dated 22nd April 1887, from the Commissioner, Northern Division, to the Secretary for Upper Burma.

these ranges are in Möng Mit State, namely, Upper and Lower Shweli, Möng Mit, Wainglôn and Kunchaung.

Each range is divided up into a number of beats in charge of Foresters or Forest Guards, or this subdivision, if important, is called a "sub-range," and is in charge of a Deputy Ranger and is again subdivided into beats.

Revenue Collectors are stationed at Thabeitkyin, Myadaung, and Inywa and the last named, who is also required to patrol the Shweli below Myitson, has an assistant.

There is a Forester in charge of the Government Fuel Depôt in Mogök under the orders of the Mogök Ranger.

Staff.

The present (1914) staff consists of one Divisional Forest Officer, one Assistant and one Extra Assistant Conservator and—

—	Permanent.	Temporary.	Total.
Rangers	...	4	4
Deputy Rangers	...	14	14
Foresters	...	33	33
Forest Guards	...	24	24
Fuel Durwan	...	1	1
Revenue Collectors	...	3	3
Revenue Peons	...	3	3
Clerks	10	...	10
Peons	4	1	5
Office Durwans	...	1	1

Of the ten clerks, seven work in the Divisional Office, and two are attached to Rangers.

The cost of Forest Administration and staff amounted in 1913-14 to Rs. 1,29,495 and the average for the five preceding years was Rs. 1,06,446.

Financial Results.

The financial results of the working of Forest Administration is given below:—

	1913-14.	1912-13.	1911-12.	1910-11.	1909-10.
	Rs.	Rs.	Rs.	Rs.	Rs.
Revenue	5,47,059	2,89,664	4,27,580	6,96,711	4,93,088
Expenditure A. Works.	47,898	80,047	83,753	98,491	11,923
B. Establishment	81,597	80,809	79,053	74,362	62,613
Total	1,29,495	1,10,360	1,18,806	1,10,763	1,04,584
Surplus	4,17,564	1,72,314	3,14,784	5,85,958	3,93,561

An abnormally bad floating season was responsible for the decreased revenue of 1912-13. The average net revenue for the five years was Rs. 3,76,837.

History of Forest Administration after the annexation.

For Forest administration purposes the Ruby Mines District and Möng Mit State were at first divided between the Mandalay and Bhamo Divisions. At the end of 1890 part of the area was absorbed in the newly formed Katha Division, and it was not until 1894 that the present division was created.

After the annexation, the Nansit Forests (Möng Mit State) were worked for three years by the Nyaungywe *Sawbwa*, who was temporarily in charge of the State from 1889-92. He extracted some 2,000 logs. In 1890-91 Messrs. Darwood were given a lease of the Kunchaung forests, and in 1894-95 extended their operations to the Myadaung, Lower Shweli and Thabeitkyin Ranges. With the exception of the last named area, which was worked by Messrs. Foucar & Co., from 1901-10, the forests of the district continued to be exploited by Messrs. Darwood until 1903-04, their headquarters being at Sabenago for the Irrawaddy and at Inywa for the Shweli area. The earliest royalties were Rs. 12 for full sized and Rs. 7-8 for undersized logs, but these rates were soon raised to Rs. 15 and Rs. 9. Since 1904-05, leases both in the State and in the district

have been held by the Bombay Burma Trading Corporation, Limited, with headquarters at Inywa and Sabenago on the Irrawaddy and Möng Mit, Kotà and Kunchaung on the Shweli. By the terms of their lease royalty is paid at the following rates per ton of 50 cubic feet :—

	Rs.
(1) Fullsized, that is, logs measuring 30 cubic feet or over	27
(2) Undersized	10
(3) Logs of any dimensions, classed as refuse	6

The Ruby Mines District including Möng Mit State, is an important one from a forest point of view ; of a total area of 5,476 square miles, it has been estimated that forest covers 5,398 square miles, of which 1,425 square miles have been formed into reserves. These forests are important to the outer world not only for their outturn of teak, but also for the production of less valuable woods, such as *ingyin kanyin* and *in*, much used in Mandalay, as well as bamboos and canes. The forests clothing the slopes of the hills around the land-locked valley of Mogök are also important, but from a local point of view only, for the continuous supply of minor building timber and firewood to the population of the town. Their existence now is undoubtedly due to the foresight of Forest Officers in 1891, who, by reserving these areas, have conferred a boon on the inhabitants which is now but little appreciated by them.

The teak from the Shweli forests, which are exceptionally well served by floating streams, was much exploited in the time of the Burmese Kings, and having been largely used in building the towns and monasteries of Ava and Mandalay had a somewhat exaggerated reputation, which was probably enhanced by the operations of Messrs. Darwood & Co., who extracted under their purchase contract very little but large first class timber. There is no doubt, however, that all the more accessible forests were much overworked, and the stock of teak in the forests as they stand now is very much inferior to that of the Tharrawaddy, Toungoo and Pyinmana districts. Nevertheless, a very valuable asset still remains, for the economic working of which plans have been prepared.

The teak forests in the Irrawaddy drainage are of less importance, partly owing to the comparatively thin stock of teak naturally found in them, and partly because the timber from most of them has to be carted from 5 to 15 miles to the bank of the Irrawaddy, owing to the lack of good floating streams.

Commercial value of forests.

The once rich *indaiing* forests, yielding *ingyin*, *thitva* and *in* woods, around Tagaung have now been exhausted by the demands of the Mandalay trade, but a great part of the tract stretching north and east from Myadaung to Inywa and into the Shweli drainage where *kanzin* also is plentiful, has been saved from their fate by timely reservation. The revenue from timber other than teak, which was about half a lakh ten years ago, was over Rs. 90,000 in 1913-14. The forests in which this useful class of timber remains more or less unexploited are those remote from good floating streams, and as long as prices remain at their present level, the timber cannot be brought out of these forests at a profit; for the timber is heavier than water, and it is the prolonged and difficult float by the aid of bamboos that raises the cost of extraction, while the duty levied by Government is so small that the construction of good roads is not warranted.

Padauk, though valuable and fairly plentiful, especially in the Shweli, is in little demand, and *pyinkado*, which is found in some quantity in the Irrawaddy forests, is handicapped by the heavy cost of floating it to Mandalay.

Besides the fuel supplied to the inhabitants of Mogök from the reserves in that valley, there is a considerable trade in fuel from the forests between Thabeitkyin and Twinne in the Thabeitkyin Range for the town of Mandalay, and for the use of the steamers on the Irrawaddy. Mention should also be made of the enormous outturn of bamboos from all parts of the division, both for sale in Mandalay, and for floating the heavier timbers. Except canes, which are much used for rafts, the outturn of minor produce is not important. Except the fuel from the reserves around Mogök town and the *padauk* mentioned above, all extraction of forest produce, whether from reserves or unclassed forests, is done by purchasers. The teak is extracted under purchase contracts from all forests by Messrs. the Bombay Burma Trading Corporation, Limited. Other timber and minor forest produce are extracted by traders under prepaid licenses, except bamboos and canes from unclassed forests, in respect of which duty is only paid if the produce passes a revenue station. The extraction of canes and bamboos from reserves has been placed, experimentally, on the same footing in the interests of teak regeneration.

Nature of forests and progress of reservation.

(a) *Mogök Township*.—Hill forest varying from 2,000 to 8,000 feet, chiefly upper evergreen and upper mixed, much cut up by *taungyas*. The forests are not of much value from a revenue point of view, but are important climatically as well as for the fuel and timber supply of Mogök. Fuel

from the reserves is cut and sold by Government, but unclassed forests are worked free by traders. Duty is ordinarily charged on fuel brought into Mogök, but in 1908 and again in 1914 the tax was suspended owing to depression of trade.

The block of reserves situated around Mogök, consisting of 5 areas, may conveniently be dealt with as one.

They are—

1. Ongaing Reserve.	3. Kyatpyin Reserve.
2. Mogök	4. Bernardmyo
,,	,,
5. Kathè Reserve.	

As originally constituted, the reserves were called Ongaing, Bamon, Mogök, Yebu, Peikswe, Kyenitaung, Bernardmyo, Kathè and Kyatpyin, and were notified in Revenue Department Notifications Nos 31, 32 and 33 of 11th February 1891. The constitution and boundaries were subsequently altered into their present form in Notifications Nos. 437 and 438 of 13th December 1897, No. 129, dated 10th April 1899, No. 104, dated 23rd February 1900, No. 511 (Forests), dated 28th December 1900, No. 606 (Forests), dated 29th December 1904, No. 199, dated 4th November 1907 and No. 243, dated 30th November 1907. The modifications disforested some thousand acres to allow of the extension of Mogök town, and on account of the abandonment of Bernardmyo as a cantonment, and the resulting area, as surveyed by the Forest Survey Department, is 30.4 square miles.

The reserves cover the crests and sides of the hills enclosing the cup in which the town of Mogök is situated, and also the hills lying between Mogök and Kyatpyin and adjacent to Kyatpyin on the north-east. The boundaries are arbitrary and skirt cultivation and dwelling sites. The object of reservation was to ensure a permanent supply of fuel and the cheaper class of timber for the Ruby Mines Company, and for the inhabitants of Mogök town, and also to preserve a plentiful water supply, which is essential to the practice of ruby mining.

Virgin evergreen forest covers the less accessible upper slopes, while below this is found a rather mixed growth of oaks, chestnuts, etc., with a good deal of grass undergrowth; in places there are extensive blank areas of grass, in part natural, but mainly the result of old *taungya* cutting. Close to Mogök town, forest of a more or less dense evergreen is being brought over into regular coppice with standards.

The reserves, both for fuel and timber, are worked on a regular system. Part of the Shwe-u-daung Reserve (see below) falls within the Mogök Subdivision.

In order that some of the unclassed areas which have been depleted of high forest by *taungya* cutters in past times may recover, the following areas have been closed against *taungya* cutting under rule 19 of the rule under the Burma Forest Act:—

1. The Namiwa enclosure 27½ square miles, west of Mogök.
2. An area of 4 square miles (the Ingyin Taung) south-west of Mogök.
3. An area of 36 square miles (the Loi Chau enclosure) east of Mogök.
4. The Kyauksin area of 28 square miles north-west of Mogök (lately modified by the formation of the Shwe-u-daung Reserve).

(b) *Thabeitkyin Township*.—A fairly level stretch of *indaing* or dry mixed forest some 10 miles broad running the whole length of the township parallel with the Irrawaddy is flanked on the east by the hill ranges forming the watershed which divides the Irrawaddy from the Madaya and Shweli drainages; the highest point is the Taungdaw or Shwe-u-daung (6,223 feet), and the average height of the range from 1,500 to 2,500. With upper mixed forest and evergreen at the higher altitudes, the forest covering the greater portion of the slopes is mixed bamboo forest, either moist or dry, with a sprinkling of teak and a fair amount of *pyinkado*. The *indaing* forest covering the plains is generally of poor description, and the dry forest with which it alternates produces chiefly bamboos and fuel, though there are some patches of *padauk* in the northern end of the township for which a rough working plan has been drawn up. There are three reserves (excluding a portion of the Shwe-u-daung Reserve).—

Chaunggyi	46·6 square miles.
Kyaukgyi	27·0 ,
Pinkan	27·1 ,

The first was constituted under Notifications No. 64, dated 17th February 1897, No. 249 (Forests), dated 10th July 1899, and extended by Notification No. 489 (Forests), dated 14th December 1900, a further addition being made under General Department No. 137, dated 2nd July 1900 by transfer of part of the Singu Reserve in Mandalay Division.

The whole was amalgamated in Notification No. 334 (Forests), dated 25th September 1901, and reduced by the exclusion of 300 acres under Revenue Department Notification No. 76, dated 5th March 1902, the area finally reserved being 46·6 square miles.

The area is situated in the south-west corner of the district adjoining the Mandalay district, and the boundaries include that part of the drainages of the Chaunggyi, Onmin and Onzon *chaungs* which lies to the east and south of the Wapyudaung-Chaunggyi road, as well as the western slopes of the Taungnyo range to within a short distance of Wapyudaung.

The area was reserved in order to bring in to proper working the teak and *pyinkado* forest contained therein. The greater part of the hill slopes is covered with dry mixed bamboo forest containing a stock of teak, which on detailed examination is turning out rather disappointing; the more level areas in the western part of the reserve contain only poor *indaing* forest, included only because the main road forms a satisfactory boundary. A purchase contract was held by Messrs. Foucar & Co., and the girdled teak left by that firm has been extracted by Messrs. the Bombay Burma Trading Corporation, Limited.

The Kyaukgyi Reserve was originally notified under No. 188 (Forests), dated 25th May 1899; two extensions were notified under Nos. 29 and 36 (Forests), dated 21st January 1903; and the whole amalgamated by Notification No. 387 (Forests), dated 30th September 1903. The area finally reserved is 27 square miles. It is situated on the western slopes of the Irrawaddy-Shweli watershed, and, with the recently notified Shwe-u-daung Reserve, covers the headwaters of all the streams lying between the Thabeit-kyin-Mogök cart-road and the Taungnyo range of hills, near Ye-nya-u. The western boundary is aligned to exclude the permanent and temporary cultivation of Wapyudaung, Ondagu and Kyaukgyi villages.

The object of reservation was the same as in the case of Chaunggyi. The stock of teak is not considerable.

The Pinkan Reserve was finally notified in Notification No. 534 (Forests), dated 10th December 1902, and occupies 27·1 square miles as at present surveyed. It is situated on the western slopes of the Irrawaddy-Shweli watershed, adjoining the Kyaukgyi reserve on the south and the Twinnge-Möng Mit road on the north; the boundaries include the headwaters of the Ye-nya-u and Maungwe streams and skirt the culturable areas near Ye-nya-u and Pinkan villages.

These three reserves have been united into a working circle under a single working plan, which has not yet been finally sanctioned.

The following area has been closed against *taungya* cutting under Rule 19, Burma Forest Act:—

The Natpan-Theni area, 52½ square miles, east of the Chaunggyi extension.

There is very little teak in this area, but the mixed forest is to be allowed to recover in the hope that it will grow up again into high forest.

(c) *Tagaung Township*.—The type and distribution of forest described in Thabeikkyin Township is continued into the southern half of Tagaung Township, but further north the range of hills dividing the Shweli from the Irrawaddy drainage inclines eastwards towards the former river, leaving on the west a broad flat plain covered with *indaing* forest of varying quality. In places, especially in the north near the junction of the rivers, the growth is very good and the forest has been heavily worked by local traders.

The *indaing* stretch mentioned above was reserved in 1908 in order that the operations of traders might be properly regulated.

There is also a small area on the west of the Irrawaddy opposite Kyahnya which belongs to the Mu Division and forms part of the Tagaung Township; this has been partially taken up in the Gonga Reserve.

The Taukta-kugyi Reserve, estimated at 40·3 square miles, was notified in Notification No. 144, dated 11th December 1906. It covers the headwaters of the Naunglon *chaung*, and is drained by the Taukta *chaung*, the Kugyi *chaung*, the Wabo Yôn *chaung* and Pinlo *chaung*.

The teak stock, on account of which the reserve was formed, is rather patchy, large areas being almost devoid of good trees, whereas in places some excellent groups occur.

The Hinthar Reserve was first notified in Notification No. 308 (Forests), dated 22nd September 1898; an extension was notified in Notification No. 404 (Forests), dated 27th November 1902, and the whole area was amalgamated in notification No. 378 (Forests), dated 17th September 1903.

Its area is 75·6 square miles.

The reserve lies east by south of Myadaung and covers the hill slopes in the drainage of the Hinthar, Gyolwe, and Zibin *chaungs*, and the area lying between them. In

1909-10 a working plan for the Hintha Working Circle, including Ondok, Kyauktaung and Hintha, was sanctioned.

The stock of teak is on the whole fair, and there is a fair admixture of *pyinkauo* and *padauk*.

The Kyauktanng Reserve was notified in Notification No. 102 (Forests), dated 20th March 1903 and contains an area of 34 $\frac{1}{2}$ square miles. It is situated on either slope of the Irrawaddy-Shweli watershed, commencing from the point where the Myadaung Ingyinbin road crosses the ridge, and running northwards to the neighbourhood of Mengo village, and its boundaries are aligned to include the hill slopes and exclude the more level *indaing* areas, which have subsequently been largely taken up in the Indaung Reserve. The teak stock is sparse and suffered much from over-extraction before the annexation, but the reserve contains large quantities of good *kanyin*.

The Indaung Reserve, notified in Notification No. 60 (Forests), dated 27th April 1908, area 162 square miles, lies to the west of the Kyauktaung Reserve, and adjoins Hintha to the south. Northwards to the Shweli and west to the Irrawaddy lies unclassed forest. It contains a good stock of *in* and *ingyin*.

The Maingdaing Reserve (Notification No. 182 (Forests), dated 2nd December 1908) lies between the Taukta-kugyi and Hintha Reserves and covers an area of 72 $\frac{1}{2}$ square miles. The object of reservation was mainly the protection of the headwaters of the streams which drain into the rich but deserted Maingdaing tract, which it was hoped to repopulate.

(d) Möng Mit State.—The forests in the Möng Mit State are far more valuable than those of the rest of the Division, on account of the greater abundance of teak in them; in the main Shweli drainage teak occurs in sufficient density to be worth reservation throughout the forests between Molo and Pyachaung, and all the best areas have been taken up in the

Nanhan Nampaw Subôk Maingtha Kunchaung Nanme	Reserves on the right bank,
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and the Paunggadaw and Ondok Reserves on the left bank. Nga-U has been taken up as an *indaing* Reserve.

In the drainage of the Nanmeik *chaung* the distribution of teak is thinner and more variable, and no areas have

been found sufficiently rich to deserve reservation. There is a good deal of timber, however, to be found (1) in the feeders of both the Nanmeik and Nanmaung *chaungs* above Möng Mit (2), along the face of the main hills from Möng Mit to Kyaukhwaw, (3) at the headwaters of the Pazin *chaung* and its feeders. In these areas the teak usually occurs in thin strips along the water-courses, the intermediate forest being devoid of it.

Padauk is fairly plentiful and well grown, but extraction is difficult and the market small.

There are rich *indaing* areas throughout the state, but only those can at present be worked profitably which are close to the Shweli and below Myitsôn. These forests have now been almost exhausted. Some protection has been afforded by the Nga-O Reserve, but further reservation is contemplated. The bamboos growing near the Shweli are a very valuable asset and are annually extracted to the extent of 15 lakhs; they are chiefly required for floating timber which will not float unaided, especially the *in*, *tingyin* and *kanyin* of the Tagaung Township.

The reserves of the State may conveniently be discussed in the groups which have been formed for administrative purposes.

The Maingtha-Kunchaung-Nanme Working Circle. These three reserves were notified in Notification Nos. 38, 39 and 40, dated 31st January 1893, and the boundaries were subsequently amended by Notification No. 287 (Forests), dated 8th July 1896. An extension to Nanme Reserve was declared in Notification No. 348 (Forests) dated 4th November 1898, while in notification No. 271 (Forests), dated 23rd July 1900, the original reserve and the extension were amalgamated into one. By notifications Nos. 215, amended by Notification No. 188, dated 22nd May 1902, and 216 (Forests), dated 17th July 1901 two tracts of 8,640 and 26,880 acres of *taungya* land were excluded from the Nanme and Maingtha Reserves, respectively, for the benefit of Kachins. The total area now reserved is 377.1 square miles.

The reserves are situated on the right bank of the Shweli river between Ma-u-gôn and Nga-O, the north-eastern extremity being within 16 miles of Siwegu. They are drained by the Maingtha, Kunchaung, Thechaung, Dochaung, Nanme, Tidaung and Khatkôn streams, and a small area at the north of the Nanme Reserve by the Setkala *chaung*, which is outside the Shweli valley. The villages of Yanbo, Kundaw and Kyain are situated in

demarcated exclusions within the exterior boundaries of the reserves.

The object of reservation was to bring under regular management the teak and *padauk* forests, which are the most valuable in the Division. The forests are for the most part of the moist mixed type, with evergreen in the lowlying areas and bamboo forest on the rising ground.

Ninety-three per cent. of the whole area is considered to be capable of producing teak, though in many of the easily accessible places the stock has been considerably over-worked. It is estimated that 2,000 sound teak trees over 7 feet in girth can be girdled annually, in addition to unsound trees which contain marketable timber. The royalty yield of the forests during 1913-14 was as follows:—

	Rs.
Teak 57,620	
Other produce 7,022	

The average royalty on teak for the past five years was Rs. 66,547 and on other produce Rs. 4,869.

The forests are exploited under a regular working plan.

The Nanhan-Nampaw-Subôk Working Circle. Nanhan and Nampaw Reserves were notified in Notifications Nos. 41 and 42, dated 31st January 1893, as amended by Notification No. 287, dated 8th July 1896, and the latter slightly modified by Notification No. 157 (Forests), dated 10th April 1900, in order to exclude the village and land of Sinpi (360 acres). The Notification of Subôk Reserve, No. 101 (Forests), was dated 16th April 1901.

The Kachin villagers of Lwewein, Kawlaw, Konmawan and Lwebinôk were permitted under the settlement to practise *taungya* cultivation in an area of 10.57 square miles in Nampaw Reserve. Lwebinôk has since been abandoned. The reserves, which contain an area of 248.34 square miles, lie on the right bank of the Shweli river, roughly enclosed in the bend which that river makes between Molo and Mabein. The tract is drained by the Nanhan, Budaung, Nampaw and Subôk streams, but a large portion of the upper drainage of the Nanpaw stream is not included. The reasons which necessitated reservation and the general nature of the forests are the same as those just described, but only 58 per cent. of the area is considered to be teak-bearing, as large tracts of unproductive evergreen forest and *indaing* are included in the reserves. It is estimated that 700 sound teak trees over 7 feet in girth, in addition to marketable unsound trees, can be girdled annually.

The royalty yield of the forests in 1913-14 was, in teak, Rs. 1,54,625 and in other produce Rs. 94, with an average for the past five years of Rs. 65,357 on teak and Rs. 204 on other produce.

The Paunggadaw Reserve [Notification No. 250 (Forests), dated 12th July 1899] contains 55·84 square miles and is situated on the left bank of the Shweli river, just above Myitsôn, and runs down from the Shweli-Nanmeik watershed to the Shweli river bank. It is fairly rich in teak.

This reserve has recently been included under one working plan with the Hmaingdaing and Taukta-kugyi Reserves of the Tagaung Township.)

The Ôndok Reserve (area 88 square miles) was notified in Notification No. 351 (Forests), dated 14th September 1899, and is situated on the left bank of the Shweli river, between Pyinlaba and Ingyinbin; it is drained by the Nyaungbintha, Hintha, Ôndok and Tadaungggwe *chaungs*. The teak forest had been heavily worked in the past, but there is a valuable stock of *paðauk* and *pyinkado*. The yield is included in that of the Hintha Working Circle (Tagaung Township).

The Nga-O Reserve (Notification No. 193, dated 25th October 1907, area 55·87 square miles) lies on the right bank of the Shweli river east of Nga-O village, in the northern extremity of the State, and adjoins the Katha Division and the Nanme Reserve.

It contains very fine *in* and *ingyin* forests, which is valuable owing to its proximity to the mouth of the Shweli. In the most accessible parts *ingyin* has already been very much overcut, but over the remainder of the area there is still some good *ingyin*, while *in* has been worked mainly close to Nga-O village.

The reserve has not yet been brought under working plans.

The Shwe-u-daung Reserve (72 square miles), nearly two-thirds of which falls into the Möng Mit State, was notified on the 22nd February 1915 [Revenue Department Notification No. 25 (Forests)]. The greater part of the reserve had already been protected under Rule 19 of the Forest Rules from the depredations of *taungya* cutters, and reservation was proposed in the interests of irrigation and the preservation of the water supply. The bulk of the forest is hill evergreen, but below 2,500 feet other types occur, notably *indaing* in the north. Moist bamboo forest occurs along the Kin stream and its feeders, and contains teak and *pyinkado* in fair quantity and of good size.

Protected areas.

The following areas, totalling $77\frac{1}{4}$ square miles, have been protected under Rule 19 against destruction by *taungya* cutters:—

(a) Ngetpyawdaw, area $36\frac{1}{2}$ square miles, in the drainage of the Pazin *chaung*.

(b) Pazin, area $11\frac{1}{4}$ square miles, in the drainage of the Pazin *chaung*.

(c) Kinchaung area 30 square miles, in the drainage of the Kin *chaung*.

Protection has also been afforded to all trees on the edge of roads and streams throughout the District and Möng Mit State by a general Notification under Rule 26.

The precious stones for which the district is famous belong, for the most part, to the mineral species corundum, the different colour varieties of which are as follows:—

<i>Variety.</i>	<i>Colour.</i>
1. Ruby ("Oriental ruby") ...	Red.
2. Sapphire ("Oriental sapphire") ...	Blue.
3. Leuco-sapphire ...	Colourless.
4. "Oriental-aquamarine" ...	Light bluish green.
5. "Oriental emerald" ...	Green.
6. "Oriental chrysolite" ...	Yellowish green.
7. "Oriental topaz" ...	Yellow.
8. "Oriental hyacinth" ...	Aurora-red.
9. "Oriental amethyst" ...	Violet.

All these are found in the District, though the oriental emerald is rare. In addition the following occur:—

Spinel or balas ruby, chryso-beryl, chrysolite, tourmaline (rubellite and other varieties) phenakite, beryl (aquamarine) zircon ("Jargoona" and hyacinth), garnet, cordierite (dichroite or water-sapphire) quartz (rock crystal, cairngorm amethyst, chalcedony, agates, etc.), epidote, iron pyrites such as marcasite, hematite and ilmenite, diopspore, fluor-spar and lapis lazuli.

For a description of all these stones, their formation and distribution, the curious reader may refer to Max Bauer's "Precious stones".

With regard to that author's statement (page 28) that "in Burma the stones are cut *en cabochon*, that is to say with a rounded surface"—a method to which he takes exception as ineffective—it may be noted that in recent

years the native cutters in Mogôk have adopted other forms of cutting, such as the Rosette and the step-cut or trap-cut, which is just as effective and brilliant for the ruby or indeed any coloured stone which shows no play of prismatic colours.

In other respects Dr. Bauer's information regarding the Ruby Mines of Burma was faulty. At page 270, the estimate of 400 square miles as the extent of the ruby bearing tract represents the area of the concession granted to the Burma Ruby Mines Company. The "plain thirty miles in width", mentioned on the same page as separating the stone tract from the Irrawaddy, does not exist. Ava (*ibid*) is not the centre of the trade in precious stones. The *byón*, or ruby bearing earth (page 271) sometimes occurs on the surface and is found mixed with the decomposed rock (*kyaukpôk*). European methods *were* applied to the cave deposits (page 272) and failed, and the danger attending native operations is overstated.

Pieces of clouded corundum (page 273) have been found weighing several viss, but they are of little value. The crystallisation of stones is the same whether found in the *matrix* (*ibid*) or in gem earth, and rubies cut native fashion *en cabochon* are still fashionable in Europe. A great deal of the stone cutting is now done (page 274) at Mogôk, and it is by no means certain that the excavation found by Dr. Nortling (*ibid*) at Nanseka, the situation of which is misstated, had any connection with gem-mining.

Early references to the gem industry.

In Yule's "Mission to Ava"/* Mr. Oldham gives an account of the mines and refers to the monopoly enjoyed by the King of Burma; and an interesting description of the ancient methods of bargaining, originally recorded by the traveller Caesar Frederick, will be found in Mr. V. C. Scott O'Connor's "Mandalay and other Cities of Burma". To this day the broker's business is conducted with the secret formalities there described. The earlier references to the mines are described in Chapter II.

Modern methods of native mining.

Three main forms of mining are employed, according to the nature of the ground. They are:—

(a) The *Twin-lôn*, or pit method, used in excavating alluvial deposits.

(b) The *Hmyawdwin*, or open trench method, resorted to on the side of a hill.

(c) The *Ludwin* system for the extraction of the gem bearing materials that fill the limestone caves.

A small round hole, of sufficient diameter to allow a man to descend comfortably by placing his feet in small steps cut in the sides, is sunk until the deposit of *byōn* or ruby earth is met with. Ordinarily speaking, each mine is worked by three men, two of whom work in turns for half a day each sinking the shaft, while the third man stands at the top lowering a small basket to haul up the earth. The haulage is performed by means of a small round tray-like basket (*chingon*) hung on to an anchor shaped piece of stick (*maunglat*) which is attached to the end of a spliced cane, varying in length with the depth of the shaft. The cane is attached to the end of a long bamboo rod (*maung-don*) pivoted on a high pole (*maung-daiing*) with a counter weight (*nauk-myi-chin*), in the shape of a basket of stones, at the further end.

The digger at the bottom of the shaft squats to his work, for which he uses a small hoe (*tuywin*) and an iron jumper (*thangyaung*). Down to a depth of 8 fathoms the work is not difficult. Below that level it is usually necessary to sink a shaft parallel to and a few feet from the first, with which it communicates below ground, to provide ventilation. The lowest depth at which the miners find it practicable to work is about 12 to 13 fathoms. The miners sometimes provide light for their work by an ingenious manipulation of a looking glass fixed at the mouth of the shaft so as to throw a ray of light vertically down, though candles are also used. When the layer of *byōn* is reached, lateral horizontal passages are driven, of which the greatest length is said to be 6 fathoms. The sides of the *twin-lōns*, except where the earth is very firm, are shored by means of vertical posts (*sa-o-daiing*) with horizontal beams (*tōk*) at intervals. Across these are fixed cross pieces (*daiing*) which are small poles of about $1\frac{1}{2}$ " diameter, behind and between which are stuffed grass and leaves. The term *twin-lōn* is only applied to circular shafts big enough for a man to creep down. The ordinary sized square shaft is known as *lebin*, which is a square with sides of 1 cubit and 1 span, or *kobin*, with sides of 3 cubits. In the latter case, apart from the shoring arrangements noted above, cross timbering divides the shaft vertically into smaller squares.

Larger excavations are known as *Inbye*, and vary in size. It is not a usual form of mining as it is very costly in timber.

From the nature of the position in which the pits are

(a) The
Twin or
Twinlōn
method.

sunk *twin-lin* operations can only be carried on in the dry season.

(b) *Hm-yaw-dwins.* These are open cuttings on the sides of the hills. A stream of water, sometimes brought from a distant source by channels and aque ducts, is directed to the upper end of the working, whence the earth is carried in a slush to the tail race of the excavation. The lighter earth is washed away and the heavier material (including the precious stones) remains. This is then washed according to the method described below. This method of working is used mostly in the rainy season when plenty of water is available.

(c) *Lud-wins.* These are merely excavations into the sides of the hills, following the gem producing deposit through the caves and crevices of the limestone.

Washing. A shallow, more or less circular enclosure (known as *ye-ban-gwet*) is made with big stones, the floor of which slopes slightly to the lower end. Into this the *byōn* or ruby earth is placed and a stream of water directed on it, while the whole mass is stirred up. At the lower end of this enclosure there is a small outlet leading into a hollow of about a foot or $1\frac{1}{2}$ feet in depth, through which the water and debris flow away. This is the *salōk*. When the earth and lighter material from the mass of *byōn* are judged to be sufficiently washed away, the heavier gravel, which contains the precious stones, chiefly varieties of corundum the specific gravity of which is very high, is gradually pulled towards the mouth of the *salōk* with mamooties, and then a man standing across the mouth of the *salōk* proceeds to scrape into it the ruby bearing residue, the water pouring over it all the time and of course carrying away occasionally precious stones, which by the custom of the country become the perquisites of the *Kanese* women. Gradually by this process the whole of the *salōk* gets filled up with a very heavy layer which is scraped out by means of shallow bamboo trays known as *pauktus*. Each tray is then taken and washed in water with a circular motion so as to get rid as much as possible of the light earth and sand, and the residue is then turned out on to the earth by the side of the working (where it is known as *theban*). It is then sorted by the proprietor of the mine or some trustworthy person, the rubies and other precious stones being placed inside a hollow bamboo which is stuck upright in the earth alongside, and known as the *sinlebauk*. When the *theban* or washed gravel has been sorted it is known as *thebat*, and in that condition the *Kanese* women are allowed to go and take portions of it to re-sort in the hope of finding a

stone that has been overlooked. While the *byōn* is being washed in the *yebangwet*, any extra large stones are picked out and put on one side, forming what is known as the *kyaukpyōn*, and by custom any person has a right to search therein and, if he finds a stone, to take it although not the owner of the mine. This, of course, is according to the native custom; for under the Ruby Regulation, any male person who picks up a stone without holding a license renders himself technically liable to imprisonment.

In another form of washing, known as the *yemyōn*, an open sluice box made of planks takes the place of the *yebangwet*. In this the *byōn* is washed by means of a stream of water. The lower end of the sluice box leads into a *salōk* or hollow, as noted above. This form of washing is mostly used in the case of what is known as *Kathe-yash* working which really consists in removing the original surface layer of soil to a depth of at most one or $1\frac{1}{2}$ feet when the *byōn* happens to be on the surface, whence it is carried to some other spot where water is available for washing. This system is said to have been so-called because it was adopted, in the original instance, by the Manipuri captives whom the Burmese Kings sent to these parts as royal slaves to work the mines. Not understanding anything about mining, they could not make *twin-lōns* and *hmyaws* like the local people, and so resorted to scraping the surface and washing it for what they could find. The term is now applied to surface operations generally, wherever conducted.

Rubies and sapphires are classified as follows by the Burma Ruby Mines Company:—

1. Individual stones are known as *lon-bauks*. Parcels of rubies are graded by size and colour as follows:—

(a) Stones of the first water (*deep rich crimson*).

Burmese names—

1. Anyun, 2 carats weight and over.
2. Lethi, average $1\frac{1}{4}$ carats weight.
3. The-bauk, average $\frac{3}{4}$ carats weight.
4. Saga-the, average $\frac{1}{2}$ carat weight.
5. Ame-the, $4\frac{1}{2}$ to $5=1$ carat.

(b) Stones of the second water, *i.e.*, bright crimson.

1. Ani-gyi, 2—6 carats weight.

(c) Third water stones, known as Ani-te or Bombaing, (because supposed to be fancied in Bombay), a *bright light crimson*.

1. Ani-te, 2—6 carats weight.

Local classification of precious stones.

(d) 4th class, Ahtet-Kya.

1. Ahtet-Kya, similar to above qualities but defective in shape or water.
2. Kyauk-me, very dark stones.

(e) Parcels of inferior stones are classified as follows:—

1. Gaungsa or Yawya, pale, inferior stones of mixed size.
2. Asa-yo, dark, inferior stones of mixed size.,
3. Asa-yo Kya, inferior to Asa-yo.
4. Akyan-the, similar to 2 but smaller.
5. Apya, flat.
6. Apya-Kya or Apya-sa, flat inferior.
7. Awa, large, defective stones.
8. Gair, large, impure, almost opaque stone.
9. Ani-the, small stones, second water, good.
10. Akyaw-the, small, pale, good.
11. Apyu-the, small, pale, inferior and rough.
12. Atwe, very rough and impure
13. Zon-si, spinels and rejections from other classifications.
14. Mat-sa, opaque sapphire.

The *Hta-waing* or Ruby Market at Mogök. In Burmese times there was no regular ruby bazaar at Mogök, each ruby trader buying and selling in his own house, or going round to his neighbours. Some four or five years after the annexation, three of the chief traders established small sheds close to the edge of what were then the chief *tin-lon* workings in the valley. As the scene of the mining operations shifted, new sheds were erected in the vicinity of them. Other migrations were caused by the extension of the Company's work. For some years the mart existed on the site of the present Ashyeywa bazaar, and in 1909, when the new bazaar was established at Gyawtaung, stalls were set apart for the ruby traders and there the business is now well established, the District Fund taking one anna a stall per mensem from the traders.

Stone cutting at Mogök. The stone is fixed in a composition of wax, chalk and resin at the end of a *kyaukdan* (or pencil) and ground on an oblong slab of wood (*hmatpyin*) on which is spread a mixture of shellac and pounded gair (or rough sapphire). The simple instrument which holds the *kyaukdan*, and constitutes the equipment of the stone cutter, is not of local manufacture, but is made in *Malun Zè* in Mandalay. Having been ground to a smooth surface or cut into facets, the stones are polished on a revolving copper plate. Spinels are ground in the same way, but are polished on stone, usually the whet-stone of Katha.

The twelve months which elapsed between the taking of Mandalay and the occupation of the Mogôk valley were the golden days of native mining. As far as can be ascertained now, mining was free and the stones obtained were disposed of without any restriction whatsoever. Mogôk was occupied by the expeditionary troops in the last days of December 1886. A considerable amount of native mining was then going on, notably in a large cluster of *twin-lîns* in the paddy fields opposite *Payataga* Hmat's house, which now forms part of the Shwebontha mine, but there was some delay in ascertaining the nature and extent of the native miners' rights and privileges. A report on the subject was submitted in January 1887 and at the end of March the Chief Commissioner visited Mogôk, and the question of the licensing system to be adopted was discussed with the Deputy Commissioner and Mr. George Streeter, who was negotiating for the lease of the mines.

As noted in Chapter II, under the Burmese Kings all valuable rubies were confiscated on behalf of the King, while all other rubies had to be taken to the lessees of the Ruby Mines for option of purchase, and if the lessees did not come to terms with the owner the rubies were sealed in a packet and sent to the ruby mart at Mandalay, the owners having to pay various ruby mart duties while the 25 per cent. royalty on the value of the rubies went to the lessee. There was also a system of forced loans made to certain leading merchants, the lessees exacting enormous interest. Besides that, the lessees collected taxes on bazaar stalls and loads brought into Mogôk, and allowed gambling on payment of fees. It was clear that the British Government could not countenance the quaint methods by which the lessees under the Burmese régime proceeded to raise the $2\frac{1}{2}$ lakhs which was intended to be annually exacted from the three *Sos* in the period immediately before the annexation. Accordingly, as Government was not in a position to take over and work the mines themselves, and could hardly know the requirements of the precious stone market all over the world, it was decided that the mines should be leased out, that stringent rules should be framed to protect the lessees' rights, and that in lieu of the bazaar and other miscellaneous taxes the ordinary *that hamedâ* tax should be levied from the

History
of the
ruby
mining
industry
after the
annexa-
tion.*

* This account has been compiled from materials furnished by Mr. Atlay, Agent of the Burma Ruby Mines Company, Limited, but for whose kindness many of the facts would have been irretrievably lost, owing to the destruction of old records in the Court-house fire of 1890.

Ruby Mines District.

inhabitants. An annual license fee of Rs. 50 for each *hmyaw* Rs. 25 for each *tu* and Rs. 12 for each *twin-lon* and formal registration were to secure a check on illicit mining, and it was a condition of the license that *all* rubies mined thereunder must be brought to the lessees, who had the option of purchase. It will be observed that at the beginning fees were levied for each mine, and not for each workman. Ruby sales were held monthly in the Deputy Commissioner's Court-house, at which licensees were required to offer their finds to Messrs. Streeter & Co.'s Agent. If the latter bought the parcel the licensee was duly paid the price agreed on, and the business was over as far as he was concerned. By a curious arrangement Messrs. Streeter & Co. were at first required to pay Government 30 per cent., not on the price actually paid for each parcel of stones, but on that originally demanded by the licensee. It was found that in practise the Agent was able to secure the stones at about half the owner's valuation, and after a short time the royalty was levied accordingly.

If the licensee did not accept Messrs. Streeter & Co.'s offer, his parcel was sealed up then and there, and was sent down to Mandalay to be disposed of by the Deputy Commissioner at public auction.

Thirty-two licenses, covering 346 workmen, were issued in April 1887 on these terms, and 83 in September. It appears that altogether there were seven court-house sales in Mogök in 1887, ten in 1888, and three up to May 1889, when Messrs. Streeter's Agent left temporarily for England. The amount of stones produced by the licensees was not large, being usually valued at under Rs. 5,000, and never at more than Rs. 15,000 at any one sale.

Meanwhile it had not been decided whether Messrs. Streeter & Co. were to get a concession as lessees of the whole stone tract. Questions had been asked in the House of Commons and Mr. Barrington Brown was sent out by the Secretary of State for India to report on the property. Various other offers were made; Messrs. Gillanders Arbuthnot & Co. sent up Mr. Danson to report on the mines, and a Mr. Moritz Unger actually mentioned £400,000 annually as the price his friends were prepared to offer. Finally, in February 1889, Messrs. Streeter & Co. were definitely recognised as the concessionaires, and they at once formed the Burma Ruby Mines Company, Limited, to take over the business. The lease itself was not to come into operation till the 1st November 1889, but in the interval the Company was given an extraordinary license to be in force up to

the 31st October 1889, permitting them to work within the limits of the three townships of Mogôk, Kyatpyin and Kathe, subject to the condition that they should not dig for precious stones at any place already occupied or, without the consent of the Deputy Commissioner, within ten yards of any claim for which an ordinary native mining license had been issued, or within any area which might from time to time be reserved by order of the Chief Commissioner for native miners.

Native mining went on as before, but the system in vogue soon proved unworkable. It was clear that the native miners were evading the condition of their license which required them to offer all their stones to the Company's agent. Various unauthorised expedients were tried by the Deputy Commissioner, and licensees were required, on pain of cancellation of their licenses, to produce stones to a minimum value at the sales. Since the licensees were obliged either to sell to the Company at the latter's valuation or to pay 30 per cent. on their own, there was an irresistible temptation to sell illicitly. Parcels of unsold stones accumulated at Mandalay, and it became obvious that the combination of a low license fee with a high rate of royalty was unsuitable, and that a change of system was desirable in the interests both of the Company and of the native miners. The imposition of a fee *per workman* instead of *per mine*, together with the abolition of restrictions on sales, became the basis of discussion, but no agreement was reached on the question of the amount of the fee until the arrival of Sir Charles Crosthwaite, the Chief Commissioner, and Sir Lepel Griffin, the Chairman of the Company, in February 1890. At the meeting which ensued, a monthly fee of Rs. 20 per workman and the removal of restrictions on sales were agreed to. This arrangement forms the basis of the relations between the Company and the native miners to this day, and has been embodied in the rules under the Regulation; while it is laid down in the leases granted to the Company that the fees shall not be reduced without their consent. From April 1890 until the end of the year the license fees were collected by the Deputy Commissioner and paid to the Company, the first quarterly instalment amounting to Rs. 25,200. Thereafter, the fees were paid direct to the Company. The stones which had accumulated in Mandalay were returned to their owners on payment of the 30 per cent. royalty. From the 1st April 1891 revised rules came into force, whereby the license was to be in the name of the mine owner, who paid a fee according to the

number of workmen employed. Hitherto the workmen themselves were, in theory, natives of the stone tract and subject to restrictions as to numbers. At the meeting of February 1890, 600 was suggested as the limit, but the average number employed in the following year was over 800, and Maingthas were already ousting the local workmen. Under the new rules only the licensee or mine owner (*pawlan*) had to be a native of the stone tract.

In 1892 the monthly rate per workman was raised experimentally to Rs. 30, but the old rate was soon resumed. The system of monthly payments in advance was substituted for quarterly payments from April 1894, and has continued ever since.

The rules which were finally adopted were published in Revenue Department Notification No. 360, dated the 27th October 1897, and supplementary rules were notified in 1899 (Revenue Department Notification No. 53, dated the 6th February 1899). All ordinary native mining licenses, except where there is a dispute between any hereditary miner and the Company, (in which case the matter comes before the Deputy Commissioner), are issued by the Company. They are issued monthly, and by a custom, which started exactly when and how no one knows, the smallest number of workmen for whom a license is granted is three. This number was doubtless fixed as the minimum with which, ordinarily speaking, a *twinlon*, which is the simplest method of mining, could be worked. Of late years, owing to the slump in the ruby market, suggestions were put forward by native miners that they might be permitted to take out licenses for the *Kathe-yaik* system to work singly or with pairs of workmen, but this has been disallowed, as it is obvious that it would be impossible to check illicit mining if it were permitted. The *Kathe-yaik* system merely consists in scratching the surface here and there on the off-chance of finding *byon* or ruby earth within a depth of a foot or two.

The form of license is still not free from ambiguity, and amendments are under the consideration of Government.

Under the lease of 1st November 1889, the conditions of which in respect of the monopoly of purchase were actually modified, as explained above, during its currency, the Company undertook to pay to Government an annual sum of four lakhs of rupees, in addition to one-sixth of their net profits.

On the expiry of the lease in 1896 the rent was 10 lakhs in arrears. At the outset of its operations the Company

attempted to develop the indigenous *ludwin* system. Tunnels were driven into the Pingutaung at Kyatpyin, to which native legend ascribed fabulous mineral wealth. The system was expensive in its operation and disappointing in its results, though a single ruby, found in Tagaung-Nandaing in January 1895, was valued at a lakh of rupees, and in March of that year it was abandoned in favour of the "Quarry" system by which the alluvial deposits of the valleys are removed and washed. This adaptation of the native *twin* method had previously been tried in the Mogôk valley, but work was hampered by the difficulty of dealing with the water which flooded the excavations. The Tagaung-Nandaing valley was treated in this way and worked out. The Luda valley was exploited in the same manner, and by June 1895 the Shwebôntha mine at Mogôk began to give satisfactory returns, but valuable time had been wasted in the earlier experiments, and the output under the new system, together with the receipts from the native miners, was not sufficient to enable the Company to fulfil its obligations to Government.

After a considerable amount of correspondence in regard to the conditions under which a new lease was to issue, it was finally agreed that, of the 10 lakhs of rent still owing under the old lease, 6 lakhs should be remitted, and that the Company should have a new lease to run for 14 years from the 1st November 1896, subject to the payment of a yearly rent of Rs. 3,15,000 *plus* one-fifth of the net profits of the working of each year, *plus* one-half of any dividend that might be declared by the Company in excess of £15,000 (*i.e.*, 5 per cent. on the original capital of the Company) until such time as the Company had paid up the remaining 4 lakhs of arrears due on the first lease. Opportunity was taken at the same time to amend the lease so as to protect the interests of the native miners, and a new condition was inserted to the effect that the members of any family, native or otherwise, which, prior to acquisition by the Company of the rights in the stone tract, practised mining therein and still continued to do so, should have an absolute right to the grant of ordinary licenses in accordance with the rules for the time being in force under the Upper Burma Ruby Regulation. The Company was not to be entitled to object to the continuance of a license once granted for working on any particular site, the site for such mines to be allotted by the Deputy Commissioner after hearing the Company's objections, if any, and duly considering whether it was required for the reasonable

extension of the Company's workings. Additional points on which the Government of India admitted the contentions of the Ruby Mines Company as being reasonable were (a) That the license fee for mining should not be fixed or reduced in any other Stone Tract until the Company's local agent had had three months' notice to show cause against the proposed rates and (b) that when the allotment of building sites in the Ruby Mines valley was proposed, notice should be given to the local agent, and any objection lodged by him within 15 days should be duly considered before orders were passed on the proposal. These provisions were not embodied in the lease itself, which, though it had effect from 1st November 1893, was not signed until February of the following year.

The years 1895 and 1896 had been exceptionally profitable to the Company. The fees received from native miners, instead of lying between 2 and 3 lakhs, amounted to no less than Rs. 4,71,000 in 1895 and Rs. 4,10,000 in 1896, while the estimated value of the stones extracted by the Company under their extraordinary license rose to Rs. 5,60,000 in 1895 and Rs. 6,87,000 in 1896. Meanwhile, although the outturn in trucks washed had very largely exceeded the estimate, the average value of each truck had dropped below one rupee. The new system, however, was reported to give a fairly reliable return, though the prospect of finding individual stones of high value was no more certain than before. The great difficulty was to keep the water below a certain level, which rendered it impossible to deepen the mines. An electric plant was installed to pump out the water and was in use until Mr. Morgan's great tunnel solved the difficulty.

After 1896 came a period of depression. Native royalties, which had been expected to produce the sum of Rs. 3,15,000 imposed as dead rent, fell to less than Rs. 80,000 in the first half of 1897. Money was tight, the ruby market lost its buoyancy and large numbers of persons, who had been attracted to the mines when they were thrown open to any one who chose to take a license, found that they could not carry on work under the existing conditions, and only the old resident miners remained.

Under the new lease "hereditary miners" had important privileges, and it became necessary to register them. Much searching of old records ensued, but the value of the earlier lists was discounted by the fact that in the year 1888, when the first attempt was made to enumerate them, many of the *bona fide* miners had not recovered from the stampede

which preceded and followed the occupation of the country, and were still in hiding. This and other points were discussed at a meeting summoned at the instance of Sir H. Thirkell-White in April 1906, and it was decided that "hereditary miners" consist (a) of the surviving representatives of the 44 persons who held *hmyaw* and *lu* licenses in 1888 and their direct descendants through both lines and (b) of those who had given proof that they belonged to a family which practised mining before February 1889 (the date of the Company's first lease) and had not abandoned it for a period of three years. Both lists are revised annually. List (a), to which each adult representative is admitted on proof of claim, is constantly growing, but list (b) records only personal rights, which do not continue to the right-holders' descendants, and gets smaller each year. In view of the limited extent of good ground still available, it was suggested that list (a) should be restricted to direct descendants in the male line, but the miners' representatives objected, and their somewhat short-sighted views were allowed to prevail. In June 1899 the Government of India issued fresh mining regulations laying down revised scales of royalties on minerals. The royalty on precious stones was fixed at 30 per cent. on the net profits of each year, and the matter being put before the Burma Ruby Mines Company the Board agreed that the percentage payable under the existing lease should be raised from 20 per cent. to 30 per cent. In the same year the dead rent or royalty was temporarily reduced from Rs. 3,15,000 to Rs. 2,00,000 for a period of five years. Before the expiry of the five years it became clear that the lease must be modified in respect of the rent. Moreover, the Company were anxious to secure a long-term lease in view of the heavy cost of the Mogôk drainage tunnel and other development works. Accordingly the lease of 1904 (which still subsists) was executed. It is dated 28th April 1904 and provides for the payment of an annual rent of Rs. 2,00,000 *plus* a sum equal to 30 per cent. of the amount, if any, by which the Company's collections of native mining royalties exceed two lakhs in any year; *plus* a further sum of 30 per cent. on the net profits of the Company's working on each year. The lease has a currency of 28 years. Between 1906 and 1910, not only was the Mogôk drainage tunnel completed at a cost of some £40,000 but the Company was put to heavy expense in expropriating the people from the centre of the town for the extension of their operations. At a time when it might

reasonably be hoped that the shareholders could at last expect a return on their money, the ruby market was again (1907) severely depressed, the disposal of the Company's stones became difficult, and native mining fell off to such an extent that the collections of royalties, which had averaged over two lakhs between 1904-05 and 1907-08, fell in 1908-09 to a lakh and a quarter. Payment of arrears had to be postponed, and a temporary arrangement made in 1909, whereby the Company pays its actual collections to Government and receives 10 per cent. for the cost of collection; has been extended from time to time and is still in force. Three years later the accumulated arrears were remitted, the Company undertaking to make good the debt, if possible, from surplus profits. Development at Kathè and a most unfortunate enterprise at Bernardmyo further drained the Company's resources and absorbed a considerable proportion of their revenue. The Kathè workings were opened in February 1914, but by that time bank failures in India had almost halved the receipts from local sales and the Company was in a critical position. A faint glimmer of a reviving market was extinguished by the outbreak of war. Work has been restricted and expenses reduced, but the prospect is gloomy and native royalties, in which the Company has no longer any but a limited interest, have fallen almost out of sight.

Tourma-
line.

Dr. Bauer* mentions the occurrence of tourmaline in the valley of the Nampe, but the finds are unimportant. Mining on a larger scale was formerly carried on in Möng Mit State and the following description is compiled from notes recorded in 1907:—

The mines, which are situated about a mile east of Naingnin, were, according to local tradition, first discovered and worked by the Chinese, and subsequently from time to time by the Kachins, who soon tired of it. The Möng Mit *Sawbwa*'s authority did not extend to the hills and it was not till about 1882 that Kye-San-Hpi, a Shan adventurer from Namkhan, had the courage to reopen the mines. He became involved in the dynastic troubles of the State and was killed in an attack on Kan Hlaing's adherents at Sagadaung. In 1885 or 1886 the Palaungs re-established the village in the valley below the old Chinese village. For a year or two the village purchased immunity from Kachin aggression by the payment of some Rs. 1,500 to the neighbouring chiefs, but as the Palaungs developed the original

water channels of the Chinese and Kachin domination weakened, the *Sawbwa* Kap-U asserted his jurisdiction and levied a royalty of 5 per cent. from the buyer and $2\frac{1}{2}$ per cent. from the seller, which was enhanced to 5 per cent. all round by the Nyaungywe *Sawbwa*, when in temporary charge of the State. The collection of a 10 per cent. *ad valorem* royalty on the outturn was subsequently authorised by the Local Government, on condition that no concession or monopoly was granted. This system only produced a few rupees of revenue, and when the *Sawbwa* took over the business of collection and appointed his own men the profits were only Rs. 125 a month. When Government took over the administration of the State the collection of fees was farmed out, and Seinda, who had founded the village and was anxious to retain his position, paid Rs. 1,200 in 1893 and Rs. 2,736 the following year. In 1895 he took the farm at Rs. 2,850, but the imposition of *thathameda* for the first time resulted in the practical desertion of the village. Later, the fee was reduced to Rs. 2 per workman per mensem. At this rate licenses are issued by the Assistant Superintendent, the proceeds going to Government. The industry is moribund. A rich vein was struck in 1905 but little has been done since, and it is said that the Chinese who were the chief customers have found better stuff in Siam. The methods of mining are three—*Kathe-yaik*, *twiñlon* and *hmyaw*—which have already been described in connection with rubies. The vein of hard granite rock, in which the crystals are found, rarely if ever shows an outcrop, and the occurrence of tourmaline is exceedingly capricious and intermittent. The discovery of a rich vein in 1905 was followed by a rush of *twiñlon* miners, each of whom by custom is entitled to extend operations underground to a distance of five fathoms from the centre of the shaft, but in 1907, though the whole area within 100 yards of the original "strike" was honeycombed with shafts, only three out of 62 were yielding anything. Near every *twiñlon* is erected a "Natsin" to the "Maingnin Shinma," an elderly and unattractive Chinese princess who, according to tradition, was foisted on the Möng Mit *Sawbwa*, who had selected her fair young sister. Her appearance so affected the envoys who were sent to meet her that they could not enjoy their dinner, and the incident is commemorated in the name of the spot (Nan-Kai-San, the stream of the flavourless chicken).

Graphite has been found in Thabeikyin Subdivision, Graphite, near Wapyudaung, and a prospecting license was taken

out in 1909. On examination by experts it was found to be of no commercial value and the enterprise was abandoned.

Granite, lime-stone, etc. The Public Works Department obtains its supplies of road metal and limestone close to the Tonga road, and a rough masonry stone is also quarried in considerable quantities. In 1910 and 1911 over 200,000 cubic feet of road metal were broken each year.

CHAPTER VI.

OCCUPATIONS AND TRADE.

The timber trade.

The trade in unreserved woods provides occupation for a large number of villages on the banks of the Irrawaddy and Shweli rivers, the principal timbers being *in*, *kanyin*, *ingyin* and *thitya*. As none of them will float, enormous numbers of bamboos (*tihwa* or *wapyu*) are required for the rafts and their extraction affords further employment over a large area of the district and Möng Mit State.

The bulk of this profitable trade is, however, in the hands of outside capitalists, who make advances to the local men and take good care that the advances are never worked off. The system has deplorable results and involves very wasteful working, the nominal lessee, i.e., the villager, being a man of straw, and the real contractor, who advances the license fee, pays the duty and swallows the profits having no interest in or control over the method of extraction.

Ngapi.

The fish curing industry is carried on in the neighbourhood of most of the considerable fisheries. Besides the ordinary *ngapi*, sun or smoke-dried fish finds a ready market all along the Shweli and as far as the Kodaung hills.

Other industries.

Weaving is confined to outlying villages, the product of the local looms having been almost entirely superseded by imported piece-goods.

Trade.

The bulk of the blacksmith's work is done by the Maingthas who visit the district regularly every cold weather. Traffic is registered and classified at Molo in the Kodaung, Maugôn and Konwet in Möng Mit State, Kyaukpyu on the main road between Möng Mit and the Irrawaddy, and Kyauktalon, 12 miles from Mogôk on the road to Mainglôn. The traffic through Molo and Maugôn does not

necessarily enter the district and Konwet has only recently been established. The bulk of the rubies, etc., leave the district by insured post and no estimate of their value is possible, especially as the same stones frequently make the journey two or three times.

Imports from Mainglôn *via* Kyauktalôn, which were valued at Rs. 4,52,000 in 1908-09 (when opium was imported to the extent of half a lakh for the Mogôk shop) were worth Rs. 4,45,000 in 1913-14, the rice traffic alone being responsible for about half this amount. In the same period the exports registered at Kyaukpyu rose from Rs. 4,83,165 to over 7½ lakhs. These figures represent the extent to which Möng Mit State is dependent on outside sources for all the necessities of life except rice and tea, and at the same time illustrates the growing prosperity of the State. In both the cases quoted the return traffic consists almost entirely of treasure, Möng Mit having nothing to exchange except its surplus rice, which goes to Mogôk, and the latter place producing nothing but its precious stones, which find their market elsewhere.

CHAPTER VII.

MEANS OF COMMUNICATION.

In the riverine portion of the district the principal high-ways are the Irrawaddy and Shweli rivers. It may be said that practically all the villages in the Thabeitkyin and Tagaung Townships with a few unimportant exceptions, are situated on the river bank. The principal trading centres are Thabeitkyin, which is the port for Mogôk, Twinnge and Kyahnyat (the two river termini of the main road from Möng Mit State), Myadaung (opposite Tigyaining) and Kanni, a little further north, the two centres where the timber traders mainly congregate, and Inywa at the junction of the Shweli with the Irrawaddy in the extreme north of the Tagaung township, which is the principal rafting station for the timber that comes down the Shweli. The steamers of the Irrawaddy Flotilla Company call at the principal villages on their way between Mandalay and Bhamo and there is a ferry boat to Thabeitkyin which runs twice a week, leaving Mandalay on Mondays and Thursdays and returning on Wednesdays and Saturdays. The express steamers call at Thabeitkyin, Tagaung and

Water-
ways.

Inywa and the cargo steamers at Thabeitkyin, Sabenago, Hinthamaw (or Mingôn), Tagaung, Tiguaing (for Myadaung), Kanni and Inywa. In the rains cargo steamers also sometimes stop opposite Twinnge, but owing to the growth of a sandbank the village is now nearly a mile inland, and it has become necessary to find a new terminus for the Möng Mit road, where heavy goods can be unloaded without breaking bulk.

Inter-village communication other than between the special points noted above is mainly by country boat on the Irrawaddy or, if the journey is down stream, by raft, either the ordinary timber rafts bound for the Mandalay market or the paddy rafts from the Mezachaung valley of the Katha District, which bring supplies to the riverine villages. From May to the end of October or even later there is practically no land communication between the riverine villages, owing to the difficulty of crossing the frequent streamlets that flow into the Irrawaddy, but in the dry weather there are practicable paths along the bank.

The same conditions obtain along the Shweli, but land journeys are unpopular owing to the number of tigers.

Roads.

Inland communications, so far as the riverine portion of the district is concerned, are practically confined to the main trade arteries, *i.e.*, the Tonga road from Thabeitkyin to Mogôk, and the roads leading from Kyahnyat and Twinnge *via* Thitkwèbin (on the boundary between Möng Mit State and the District) eastward to Möng Mit. The Mogôk-Thabeitkyin road is metalled and maintained by the Public Works Department, while of the road from Twinnge to Möng Mit the maintenance of the $13\frac{1}{2}$ miles which lie within the district is carried out by the Public Works at the cost of the District Fund. This is only an unmetalled road, banked and bridged where required. The section between Thitkwèbin and Möng Mit, a distance of about 36 miles, is maintained at the cost of Möng Mit State. There are altogether 109 miles of metalled road in the district of which 59 $\frac{1}{4}$ belong to the Tonga road, the rest comprising the station roads of Mogôk and Kyatpyin. There is a motor service daily, except Sundays, between Mogôk and Thabeitkyin, the journey occupying from 5 to 7 hours. There are also about 121 miles of unmetalled roads, 109 of which were in charge of civil officers up to 1909-10.

The chief unmetalled roads are those leading from Mogôk, *via* Kyauktalôn to Mainglôn in Hsipaw State, a total distance of $20\frac{1}{2}$ miles, from Mogôk to Bernardmyo, $10\frac{1}{4}$ miles, from Mogôk to Konwet (being that portion of

the Mogôk-Möng Mit road which lies within the district) 13 miles. Mention has already been made of the road from Twinnge to Thitkwèbin, and there is also a road leading from Wapyudaung, 10 miles east of Thabeitkyin, *via* Chaunggyi towards the Mandalay District, which is bridged in parts. Amongst projected roads, to be undertaken when funds permit, are those leading from Tagaung eastwards to Hmaingdaing and thence onwards to Pyinlaha on the Shweli in Möng Mit State, and from Kanni on the Irrawaddy, *via* Pauknet and Hintha, to Ingyinbin, where the State and the Tagaung Township meet on the Shweli. This last route, except for a small portion of less than a couple of miles near the Shweli, is already practicable during the dry weather for carts from Kanni, and, if opened up as a fair weather cart road, would save two or three days' journey round the north bend of the Shweli.

Apart from the roads mentioned above, inter-village communications are for the most part narrow paths cleared through the jungle each season in the riverine tracts when the river falls. In the upland portion of the district in the Mögôk Subdivision there are narrow, often steep, and sometimes slippery mule tracks, the upkeep of which devolves on the villagers themselves and which consequently, except during the dry weather, are to be avoided as much as possible. For travelling in the district, cart transport is practically confined to the roads between Thabeitkyin and Mogôk and Twinnge and Möng Mit. Elsewhere mule or elephant carriage is requisite, though between December and April, in the northern part of the Thabeitkyin Township, and in the Tagaung Township, country carts can with a certain amount of difficulty make their way about from village to village, provided special arrangements are made to clear a track. Except when travelling from east to west, however, in the riverine portion of the district it is more convenient to travel by water.

The main trade of the district, apart from water-borne traffic, passes between Thabeitkyin and Mogôk and between the latter and Mainglôn and Möng Mit. In Burmese times Thabeitkyin was a small fishing village of a few huts, and though there was an old existing mule track in that direction the main approach to Mogôk was *via* Sagadaung in Möng Mit State. This was the route adopted by the first military column that entered the Mogôk valley. Subsequently a mule track to the river was aligned by the Sappers and this was gradually improved into a cart road,

metalled in sections, and completed in its present form in 1901-02, though many re-alignments and improvements have been made since that date, especially between 1904 and 1908.

Before the opening of this road such a thing as a cart had never been seen in Mogök. Until the road was metalled, the Ruby Mines Company found considerable difficulty in getting up their machinery from Thabeitkyin and it is on record that one convoy of carts took no less than six weeks to traverse the distance from Thabeitkyin to Mogök, although European subordinates were in charge and making every effort to push on. The total cost to Government of this road from the commencement till 1911 was 15½ lakhs and its up-keep costs about one lakh per year. As regards the other metalled roads, Provincial Funds are allotted for the up-keep of about 3 miles, while the remainder are maintained by grants from the District Fund.

Rest Houses. Along the Thabeitkyin-Mogök road there are seven Public Works inspection bungalows. The bungalows themselves are fitted with the ordinary furniture, chairs, tables, etc., likely to be required, with a certain amount of crockery and candle-sticks. At Mogök, Shwenyaungbin and Thabeitkyin the durwans can provide meals. The bungalows are of a good pattern and have been made specially spacious as regards accommodation, so that they should be available for unofficial travellers.

District Fund Rest Houses. There are also District Fund Rest Houses at the following places:—

Tagaung Township, at Tagaung, Inywa and Tawya.

Thabeitkyin Township, at Kyahnyat, Kyaukpyu and Twinnge.

Mogök Township, at Bernardmyo, Kyauktalon and Nyaungdauk.

These are only furnished, if at all, with the barest necessities. Having been built at various times they are of different patterns, but usually contain two bed rooms with bath rooms and a centre room or verandah for meals, with necessary outhouses, and are generally in charge of the headman at each locality.

Forest bungalows. There are also a certain number of bungalows maintained by the Forest Department which are as a rule of a much better pattern than the District Rest Houses, being higher and more spacious. They are situated as follows:—

In Mogök Township, at Bernardmyo.

In Tagaung Township, at Hinthu, Okshitkon and Nampaung.

In Thabeitkyin Township, at Pinkan, Chaunggyi and Yenya-u.

At each of these there are two or three tables and chairs.

A tent is a necessity for the traveller in this district. Except in the richer mining villages *sayats* are barely habitable, and, particularly in Palaung and Lishaw villages, are never really unoccupied.

This river is navigable for small launches as far as The Myitsôn between May and October. The Bombay Burma Shweli Trading Corporation, Ltd., have a couple of launches which ply at irregular intervals, visiting their various headquarters along the Shweli. After the rains, however, the river falls rapidly and the formation of a bar at the mouth of the river soon prevents navigation. By January even bamboo rafts are frequently aground on sandbanks or snags. Above Myitsôn, the Kyauktabo rapids make the river unnavigable, and the volume of traffic which would follow has not been considered sufficient to justify the expense of blasting a channel.

Until comparatively recent times, cart traffic on the Trans-Tonga road was practically confined to the open season, port when the completion of the harvest released large numbers of carts from the Shwebo District. The requirement of a minimum width of tyre ($2\frac{1}{2}$ ") under the Burma Highways Act restricted this annual migration and local carts can now be procured, with some difficulty, throughout the year.

The nerrick rates for transport, are posted up in every bungalow. Both mules and carts can sometimes be obtained at lower rates, especially in the cold weather, when mules are plentiful and compete with the Motor Companies.

On the Shweli it is exceedingly difficult to get transport up stream, as boats are scarce and are fully occupied in the *ngapi* and salt trade. No nerrick rates have been fixed and each traveller has to make his own bargain. Usually, if it is desired to reach any place on the Shweli, it is more convenient to go overland to a spot higher up and then drop down by raft. Bamboos can be obtained at almost every village on the Shweli, but the raftsmen insist on being relieved at every village, and in the dry weather the journey from Myitsôn to Inywa takes five days, with average luck in avoiding snags and sandbanks. The scenery is, for the most part, disappointing; the wet bamboos exhale a smell faintly suggestive of a tannery; game is represented by the ruddy sheldrake and an occasional peacock (on a tree); the *mahseer* is a special breed, surly and uninquisitive; the only break in the monotony is the periodical grounding of the raft, the only amusement,

the contemplation of the enthusiastic but inexpert efforts of the servants, constantly frustrating the scientific heavings of the raftsmen, the only excitement the rescue of the cook, marooned on a sand bank as the raft slides into deep water.

**Posts and
Tele-
graphs.**

There are five Post Offices in the district, the Mogök Head Office, with sub-offices at Kyatpyin, Shwenyaungbin, and Thabeitkyin, all on the Tonga road, while at Tagaung there is a branch office, usually in charge of the head clerk of the Township office. There is no District Fund service, and in the existing state of business the postal facilities appear to be sufficient. For persons living north of Tagaung the Post Offices at Tigyaing and West Inywa on the Katha side are accessible by river, and of course the Irrawaddy steamers carry Post boxes.

Telegraph offices are located at Mogök, which is the head office, with combined Post and Telegraph offices at Kyatpyin, Shwenyaungbin and Thabeitkyin on the Tonga road. Communication by helio, maintained by the Military Police, is kept up, except during the rains, between Mogök, Momeik and Molo, with intermediate stations at convenient points on the hills. There is also a combined Post and Telegraph Office at Möng Mit. There is no telegraphic communication with the headquarters of the Tagaung Township, though in Burmese times the line ran on this side of the river and the telegraph master of those days remembers the agitated messages that came through as the British Expedition approached Mandalay.

CHAPTER VIII.

FAMINE AND SCARCITY.

The agricultural conditions of the different parts of the district have been described in Chapter IV. Although no part of the district is self-supporting, the hilly tracts, with an average rainfall of 100 inches, are considered to be reasonably immune from failure, while the outside sources of its food supply, Mainglôn and Möng Mit, are climatically well-favoured. Only a limited area of the Thabeitkyin and Tagaung townships is considered to be secure from famine, either as being well situated in respect of rainfall (as in the case of villages situated on the lower slopes of the hills) or because the *kaukkyi* crop is supplemented by *mayin*, as in parts of Tagaung.

Some 100 villages in the two townships are officially held to be liable to scarcity, though in practise there has never been any difficulty in supplementing the local crops by imports from Katha and Bhamo.

A programme of works has been drawn up in case of need, but it has not been necessary to put the scheme in operation. Revenue is paid on the estimated harvest value of the reaped crop. Failures are automatically exempt and such local disasters as have occurred (crop failures are often aggravated by losses from cattle disease) have been alleviated by temporary reductions in the rate of *thathameda*.

CHAPTER IX.

GENERAL ADMINISTRATION.

As explained in Chapter II, the Ruby Mines District as *General*, now constituted was a slow growth, made up of portions of diverse Burmese jurisdictions, of which the constituent elements, especially those along the riverine portion of the district, were distributed and redistributed from time to time among the adjacent districts of Katha (or, as it was first called, Myadaung), Shwebo and the Ruby Mines. This process of reconstruction was still in progress when, in June 1892, the Shan State of Möng Mit with its dependency Möng Lōng was added to the district,* to be temporarily administered under the provisions of section (1) of the Shan States Act (XV of 1888). For the purposes of administration the State was at first divided into the three townships of Möng Mit, Mohlaing (the headquarters of which were at first at Mabein and afterwards at Maugôn) and Kodaung. On 1st January 1893 the District proper was divided into the subdivisions of Mogök (with the township of Mogök) and Tagaung with townships Kyahnyat and Twinne, and this division still holds good except that the subdivisions and townships have been renamed. The old Tagaung Subdivision is now the Thabeitkyin Subdivision, the Kyahnyat Township corresponds with the present Tagaung Township, without the circles of Kyahnyat and Hinthamaw which were transferred to the Twinne, now the Thabeitkyin Township. On the 1st April 1906 the

* *Vide* Political Department Notification No. 5 of 19th May 1892

present *Sawbwa* Maung Kin Maung was installed as Chief of Möng Mit and assumed the administration of the State under the general supervision of the Deputy Commissioner. The District was thus left with two subdivisions, Mogök and Thabeitkyin, and three townships, Mogök, Thabeitkyin, and Tagaung. The Mogök Subdivision (and Township) is practically conterminous with the area of the three old Burmese jurisdictions or "Sos" of Mogök, Kathè and Kyatpyin, and also with what is known as the Ruby Mines Stone Tract. The headquarters are at Mogök, and the area is in charge of an Extra Assistant Commissioner as Subdivisional Officer, who has as his assistant a Myoök as Township Officer, the latter acting also as *Akunwun* at headquarters. The riverine portion of the district is in charge of an Extra Assistant Commissioner as Subdivisional Officer, with headquarters at Thabeitkyin, who is also in charge of the township of that name, while a subordinate Township Officer has his headquarters at Tagaung.

Terri-
torial
changes
since the
annexa-
tion.

As might have been expected from the attempt to carve new jurisdictions out of a variety of old ones, a considerable number of tentative arrangements were made before the district settled into its final shape.

On 20th September 1886 the late Mr. G. M. S. Carter assumed charge of his duties at Kyahnyat as Deputy Commissioner. The Ruby Mines District as first constituted comprised (20th July 1887).

The Kyahnyat ... Composed of the Townships (*myothugyiships*) of
Subdivision. (1) Kyahnyat. (2) Hinthamaw. (3) Male.
(4) That portion of the Theingadaw circle
lying east of the Irrawaddy.

and

Mogök Subdivi- Composed of the Townships of (1) Mogök (in-
sion. cluding the military station of Bernardmyo
(Pyaunggaung). (2) Kathè. (3) Kyatpyin.

It does not seem to have been recognized that Male lay for the most part west of the river, and that Hinthamaw and Kyahnyat included areas on both banks, for at the same time (August 1887) the Myadaung District was declared to include the township of Male, which was later defined to include Kyahnyat, Male and Theingadaw. A notification of the 9th February 1888 directed the transfer from the Ruby Mines to the Shwebo District of "all that part of the Ruby Mines District which lies on the west bank of the Irrawaddy". This area would comprise so much of the Male, Kyahnyat and Hinthamaw jurisdictions as lay west of the river.

On 29th March 1888, by a fresh notification, the transfer from the Ruby Mines to the Myadaung District of the townships of Kyahnyat and Hinthamaw was gazetted, (this was presumably only the eastern portion of them, though the Gazette notification did not expressly say so) and on the reconstruction of the Myadaung District, notified on the same date, these two circles were formally declared to be part of the Kyahnyat Township of that district. The effect of the notifications of 1888 had been to cut off from the Ruby Mines District the whole of the Kyahnyat Subdivision and leave it only Mogôk.

From 1st January 1893 the whole of the Kyahnyat Township and so much of the Myadaung Township as lay to the east of the Irrawaddy were re-transferred from Katha to the Ruby Mines. All that this could give the Ruby Mines District was at most Tagaung, which took in an area on both sides of the river, and the eastern parts of Hinthamaw and Kyahnyat, the area west of the Irrawaddy having been transferred to Shwebo already in February 1888.

Yet in December 1893* the boundaries of that part of the Kyahnyat Township of the Ruby Mines District which lies west of the Irrawaddy are described as,

South.—The Zin *chaung* (nearly opposite Kyahnyat)

West.—The crest of the Minwun range.

North.—The Ne Kya *chaung*.

This took in the whole of the west boundary of the township which would include the west portion of Tagaung circle across the river, i.e., roughly the area bounded by the—

North.—Nekya *chaung*,

South.—Gonga *chaung*,

West.—The Minwun ridge,

only, but nothing else.

Also it was forgotten that Hingamaw circle lay between Kyahnyat circle and Tagaung circle, but the effect of Notification 299 of 13th December 1893 was practically to declare what the west boundaries of the original circles of Tagaung, Hinthamaw and Kyahnyat had been when they stretched across the river, and the result was to cancel General Department Notification 39 of 9th February 1888.

This was not discovered till 1899 when the following area (which included the western portion of the original Kyahnyat and Hingamaw circles) was formally retransferred † from Shwebo to the Ruby Mines:—

North.—Gonga stream.

* General Department Notification No. 299 of 13th December 1893.
† General Department Notification No. 78 of 20th May 1899.

West.—Minwun ridge.

South.—The *Zin chaung*.

The above accounts for the narrow strip of country that the Ruby Mines District owns to the west of the Irrawaddy. The true limits of this strip were finally laid down in General Department Notification 124 of 29th April 1909.

Meanwhile, internal reconstruction had been proceeding. By General Department Notification 11 of 6th October 1889 the *Kayaings* of Twinnge and Daungbôn ceased to form a part of Möng Mit State and were incorporated in the Ruby Mines District.

This area was enclosed between on the—

North.—The Shwelaung *chaung* (which flows past Pauktabin).

South.—The Udaung *chaung* (which enters the Irrawaddy between Sabenago and Hmattaw-mu).

It will be noted that the Bernardmyo area had already been annexed in 1887 without any special acknowledgment, and as for the area which includes Wapyudaung and Kyauklebin, that seems to have been quietly absorbed from the first, the only reference to its transfer being the statement in the Upper Burma Gazetteer, Part II, Volume III, page 4 that, in 1886, at the first inception of the Ruby Mines District,—

“the strip of Momeit State between Mogôk and the river was taken over and the Sagadaung circle was given to Momeik in exchange.”

Sagadaung had always been part of Möng Mit in *Sawbu* Kan Ho's time.

To the area transferred by Notification 11 of 1st October 1889 was added the part of Theingadaw lying east of the Irrawaddy which had been given to the Ruby Mines by General Department Notification 226 of 20th July 1887, and which had not been transferred to Myadaung on 29th March 1889, with the result that the combined area reached from the Shwelaung *chaung* on the north to the Mandalay district on the south.

This area was constituted the Twinnge Township, with headquarters at Twinnge.*

The east boundary of this Township was defined as a line running from 10 miles up the Shwelaung *chaung*, south along the Lethadaung and Yegyo Taungdan and along the Thitkwebin *chaung* to the Hnitmadaw *taung*. Thence along the foot of Natpan *taung*, taking in the villages of

* General Department Notification No. 284 of 1st October 1889.

Posa, Malegale and Kyauklebin, to the boundary of the Mandalay District.

Now, as noted above, from 1888 all that had been left to the Ruby Mines District had been the Mogôk Sub-division as constituted by General Department Notification No. 227 of 20th July 1887.

Consequently, to provide for the decretion, the Mogôk District was divided into—

<i>Subdivision.*</i>	<i>Townships.</i>
Mogôk.	(a) Twinnge (<i>i.e.</i> , the area just noted).
	(b) Mogôk (containing all the rest of the Ruby Mines District.)

The next development (1892) was the addition of the Shan State of Möng Mit with its dependency Mohlaing to be temporarily administered by the Deputy Commissioner under section (1) of the Shan States Act (XV of 1888), and by Political Department Notification No. 6 of 19th May 1892 the State was divided into—

<i>Townships.</i>
(1) Momeik.
(2) Mohlaing (Headquarters of which were shifted from Ma-bein to Maugôn).
(3) Kodaung.

This necessitated the laying down of the dividing line between Möng Mit State and Bhamo, which was done in General Department No. 57, dated 27th March 1900.

Finally, as noted above, the Kyahnyat Township and the eastern part of Myadaung Township were transferred from Katha to the Ruby Mines District and by General Department No. 316, dated 19th December 1892, were formed into one township called Kyahnyat.

The Ruby Mines District was then divided as follows, with effect from 1st January 1893.—

<i>Subdivision.</i>	<i>Township.</i>
Mogôk (Mogôk).	Mogôk (Mogôk)
Tagaung (Kyahnyat).	Kyahnyat (Kyahnyat)
	Twinnge (Twinnge.)

* General Department Notification No. 19 of 22nd July 1891.

The headquarters of the Tagaung Subdivision were transferred from Kyahnyat to Tagaung in 1894, and the Township renamed Tagaung. At the same time the Hinthamaw and Kyahnyat circles were transferred to Twinnge, leaving Tagaung Township to consist merely of that portion of the Myadaung Township which lay east of the Irrawaddy and had been transferred from Katha in 1892.

The boundary between Tagaung Township and the Twinnge Township (of which the headquarters were shifted to Thabeitkyin, and which was named thereafter the Thabeitkyin Township) was fixed at the Tadaunggya *chaung*.

Finally, with effect from 1st November 1901, the headquarters of the Tagaung Subdivision were shifted to Thabeitkyin, and it became known as the Thabeitkyin Subdivision. In the interval, in 1900, there had been a partial rearrangement of the boundary with the Mandalay District just east of the Irrawaddy south of Chaunggyi and Thabeitkyin, necessitated by the formation of forest reserves.

The effect of the notifications marginally quoted was

Genl. Dept. No. 137 of 2nd July 1900, roughly to draw the dividing line Forests No. 333 of 25th September 1901, Forests No. 334 of 25th September 1901. follows:—

Up the Chaunggyi stream to where the telegraph line crosses it; thence up the line to where it crosses the south watershed of the Chaunggyi stream thence along the watershed between—

- (a) The Chaunggyi stream and its feeders.
- (b) The Kyido }
 Ongaing }
 Chaunghthali } streams and their feeders.

General administration of the district.

The general, judicial and revenue administration is in the hands of the Deputy Commissioner, assisted by two Subdivisional and two Township Officers, while there is also an Extra Assistant Commissioner stationed in charge of the District Treasury at Mogök, who acts as Headquarters Magistrate. Below these stipendiary officers come the headmen, remunerated by commission on revenue collections, of whom there are 154 in the district. Speaking generally, each separate village or group of hamlets situated within easy reach of each other has its own headman, whose powers are those laid down in the Burma Village Act (Burma Act

VI of 1907). Of these men five exercise special criminal and ten special civil powers under sections 9 and 6, respectively, of the Act. The system prevailing in Burmese times in what is now the Mogök Subdivision did not invest the local village headmen with any power or authority. The *so-thugyis* were paramount and the local headmen were at most in the position of *gaungs* with no clearly defined rights or emoluments. No such thing as a hereditary *ywathuyi* was known and, as reported by the Deputy Commissioner in 1889, "it had always been customary for them to be changed about at the will of the *so-thugyi*, and frequently they used to change of their own accord and hand over the post to another inhabitant of the village." Immediately after the annexation, however, the Deputy Commissioner proceeded to appoint headmen,* adopting the Lower Burma "circle" system and grouping the headmen (*thugyis*, *ywabks*, or *tambns*) under a *myothugyi* (who drew all the commission) where a man of the necessary standing was available. The latter, in the Stone Tract, was ready to hand in the person of the *so-thugyi*.

Separate circles were formed—

(a) of the villages in the eastern and south-east portion of what is now the Mogök Subdivision (Nyaungdauk);

(b) of the villages on the Bernardmyo plateau, 4 villages each under its own headmen.

(c) Thabeitkyin circle—with two villages,

(d) Sabenago circle with one village.

In the case of (b), (c) and (d) no *myothugyi*s apparently were appointed, but next year (1890) the Deputy Commissioner reported that the five Lishaw villages of the Bernardmyo group were "now a separate circle under Nga Eing, *thugyi* of Le-u."

During 1888-90 the villages of Kin and Shwenyaungbin, formerly part of the Kathe *so* or circle, were formed into a separate circle under the Shwenyaungbin *thugyi*, whose assistance was increasingly required for transport arrangements on the main road to Mogök.

* Deputy Commissioner's letter No. 457, dated 26th March 1889, to the Commissioner, Northern Division.

Ruby Mines District.

By the end of 1890 there were the following circle *myothugyi*-ships and village *thugyi*-ships in the district:—

<i>Myothugyi</i> -ship.	<i>Myothugyi</i> .	Whether hereditary or not.	Sub-ordinate <i>thugyi</i> -ships.
1. Mogök...	Maung Sein.	* Not	33
2. Kyatpyin	Maung Mya.	Hereditary	14
3. Kathe ...	Maung Gaing.	Do.	15
4. Nyaung-dauk.	Kon San	Not—was appointed in Burmese times by the Mogök <i>so-thugyi</i> to succeed Bo Aw. Afterwards, still in Burmese times, Nyaung-dauk was made a separate circle.	11
5. Lishaw...	Ye Ein...	Not	5
6. Shwe-nyaungbin.	Nga Htun	Not	2
7. Twinnge	Tamôn Lan.	Not	20
8. Sabenago.	Maung Ywa.	Not	2
9. Daung-bôn.	Maung Me.	Was <i>myothugyi</i> when the circle was handed over from Móng Mit.	4
10. Thabeit-kyin.	Maung Thu Daw.	Not	1
11. Wapyu-dauung.	Kon Maung.	Hereditary	2

The *myothugyi* system is, however, contrary to the policy of Government, and though it was maintained for some years in this district in consequence of the illiteracy of the ordinary headmen, the district has now fallen into

* The hereditary *so-thugyi* of Mogök fled at the annexation.

line with the rest of Upper Burma. The unwieldy Mogôk circle was the first to be broken up in 1892 and the process has continued steadily, till at the present time only three *myothugyis* are left and two of these share their emoluments with the subordinate *ywathugyis*.

The general rule is that the headman enjoys all the Headmen's commission on revenue collections made by him within his charge. The average emoluments from this source are, however, very meagre, and in many cases it has been necessary to supplement them by the grant of *thugyisa*, or revenue-free land, which is held by the headman in virtue of his office. The area so granted amounted, in 1914, to 404 acres.

Certain headmen on the main road, who have to meet heavy demands for transport and supplies, are paid a regular monthly salary from the District Fund.

The district is within the jurisdiction of the Divisional and Sessions Court of Mandalay. The Civil Courts within the district are of three grades. The judge of the District Court is the Deputy Commissioner, who exercises a general superintendence over the Subdivisional and Township Courts. The Treasury Officer and Headquarters Magistrate is an Additional Judge of the Township Court, Mogôk, which is invested with the powers of a Small Cause Court. The bulk of the Civil Judicial business is transacted in the Township Courts, though, before the slump in the ruby market, the Subdivisional Court of Mogôk had a fair number of cases. Original suits in the District Court are infrequent, the major portion of the Judge's work consisting in hearing appeals. In the decade from 1900-10 the average number of suits and the value thereof annually instituted in the courts was as follows:—In the District Court 46 cases of an average value of Rs. 5,270. In the Subdivisional Courts 115·4 cases with an average value of Rs. 416, and in the Township Courts 491 cases with an average value of Rs. 120. The bulk of the civil litigation, of course, is dealt with in the Mogôk Courts. In the riverine tract the timber trade, which provides most of the material for cases, has constantly dwindled. In Mogôk Town itself the majority of the cases are for money lent, generally on promissory notes, by the chetties and others who finance the local inhabitants in their mining ventures, and there has been a marked decline in litigation of recent years owing to the stagnation of the industry. In out-stations civil suits are usually conducted without the

Judicial administration—Civil.

aid of advocates, and at headquarters the amount of work is not sufficient to support more than two, both of whom are of the third grade. A large number of petty civil cases are disposed of by the Myoma and Shandaw *thugyis* in Mogôk Town, and of recent years by the headman of Inywa.

Registration. The Upper Burma Registration Regulation was extended to the district on the 1st January 1896 and two offices were opened at Mogôk and Thabeitkyin. An office was opened at Tagaung from 1st January 1914 for the convenience of the riverine villages of that township, but, though the provisions of the law have been widely notified, very few documents are presented for registration outside Mogôk. The prevalence of the system of village communal tenure limits the number of transactions in land, and there are few others of any importance.

In Mogôk Subdivision, outside Mogôk Town and valley, the bulk of the people are wild and illiterate and, as the village communal tenure system prevails generally, transactions in land that require registration are rare. The bulk of the registration work is confined to Mogôk Town. There the Indian money lenders, taking advantage of the slump in the ruby market, are gradually buying out the improvident "hereditary miner." Exclusive of 1896, for which figures are not available, the average up to 1910 of compulsorily registered documents was 103. The larger number of these transactions were sales of property of Rs. 100 and upwards, and mortgages. During 1909-10 an abnormally large number of documents were registered by the Burma Ruby Mines Company in connection with town lands acquired from private individuals for the extension of their mining operations. There has been a falling off in transactions of more recent years owing, probably, to the temporary shifting of native mining activity to Bernardmyo and Kabaing. The clerical staff is paid from fees up to a limit of Rs. 25 a month. From the 1st January 1915 the district came under the operation of the Indian Registration Act.

There is no separation of Executive and Judicial functions, and all Magistrates are Judges of Civil Courts and, with the exception of the Headquarters Magistrate of Mogôk, are also executive officers.

Criminal Justice. All headmen exercise the ordinary criminal jurisdiction provided for in the Burma Village Act of 1907, while five have special powers under section 9 of the Act.

Speaking generally, there has been a marked tendency for all forms of crime to diminish. This is noticeable not

only in cases under the Penal Code, but also under special Acts. As was natural, in the early days, brigandage along the main road between Mogök and Thabeikyin was rife, and gangs of persons, rendered homeless by the constant disturbances and strife between Möng Mit State and Mohlaing, took to dacoity as a means of livelihood. As order began to prevail and the more truculent of the local leaders were captured or died, the local population, being naturally quiet and law abiding, has returned to peaceful pursuits, and dacoity has been practically unknown for many years. Of recent years the depression of the ruby market has from time to time driven the miners to crime and the number of burglaries and thefts has shown a tendency to increase, but considering that the town is practically unlighted and the booty easily converted and difficult to identify, this is not surprising. Cattle theft is rare. In the riverine portion of the district stolen cattle are difficult to dispose of and in the wilder hill country difficult to catch. Thefts of mules are, however, not uncommon, stray animals being picked up by the muleteers who come over annually in the cold season from China. These cases are naturally difficult to detect or prevent, the caravan men being most casual in the way in which they let their mules out to graze untended, while they do not report disappearances till after the lapse of some days.

A comparison between the two quinquenniums 1901—05 and 1906—10 shows a very considerable decrease in the figures for cognisable crime.

	1st period.	2nd period.
Total cases annually reported	... 438	249
Total cases sent up for trial	... 403	233
Persons tried ...	... 765	410
Persons convicted	... 618	280

Since 1910 the number of true cases has remained practically stationary.

Opium cases fell as low as 27 in 1907, but have increased of later years. The amount of smuggling depends largely on the price of illicit opium. As might be expected, in a district where a large proportion of the people live by mining, gambling is rife. It used to be more or less winked at during the various *payapwes*, but the law has recently been more strictly enforced.

On the whole the district is singularly free from serious crime. It has seldom been necessary to employ the

preventive sections of the Criminal Procedure Code, and the powers of expulsion from the district given to the Deputy Commissioner by the Frontier Crossing Regulation and the Ruby Regulation are only used in exceptional cases.

Military Police.(a) The rapid advance of the British Expedition to Mandalay and the summary deportation of King Thibaw left the Burmese levies which had been hastily raised for the defence of the kingdom armed indeed, but without any definite leaders or clear scheme of action. As a consequence the country fell a prey to guerrilla warfare in which the British regular troops were cut up into small detachments to deal with insignificant bands of elusive foes. The necessity of supplementing the work done by the troops and providing permanently for the civil administration of the Province engaged the attention of Sir Charles Bernard soon after the annexation, as district officers were entirely dependent on military escorts in order to move about freely in their charges. In February 1886 proposals were submitted to the Government of India for the enlistment of two Military Police levies each to consist of 561 officers and men, and of 2200 "Military District Police," to be recruited from northern India. The proposal receiving immediate sanction; two bodies of men were speedily formed—Military Police Levies and District Police—the former consisting mostly of men who had already received military training, while the men of the District Police were for the most part quite untrained. The men reached this Province by about July 1886, and during the course of the year the number of levies was increased to 4, and the strength of the Military District Police raised to 3000 men. The British Military Officers sanctioned for the force on 1st January 1887 were 4 only, one for each of the 4 levies, while the Military District Police were in the unhappy condition of being no man's children. They were nominally under the District Superintendents of Police, who at that time had their hands very full, and the Military District Police only received such attention as could be afforded by inexperienced young Assistant Superintendents and Inspectors of Police, whose acquaintance with Natives of India was, in many cases, practically negligible.

At the beginning of 1887 the levies were kept in compact bodies under their European Officers and were employed on purely military duties, the Military District Police taking

(a) *Note.*—This account has been mainly compiled from a memorandum prepared by Captain J. Clementi, late Commandant, Ruby Mines Battalion.

a humbler rôle as district guards and garrisons. The necessity for a stricter discipline became obvious, and in November 1886 the Local Government applied for, and by January 1887 obtained, sanction to the appointment of two Military Officers to each district, with the exception of four which were left with a single Commandant. The distinction between the Levies and the Military District Police was abolished and the whole force was divided into 18 Battalions under the name of the Upper Burma Military Police.

In December 1886 a military column under General Stewart marched up to Mogök, and with him came Mr. Carter, the first Deputy Commissioner, as Civil Officer, bringing with him as personal escort a Military Police party of one Jemadar and 25 men. Subsequently, Lieutenant Burrows, the first Commandant of the Ruby Mines Battalion, arrived with a further force of 250 men, 70 of whom he left at Kyahnyat, where a Military Post had been established, as a base for the Mogök column. The nominal strength of the Battalion at the end of its first year of existence was 3 companies, but this was gradually increased during the next 4 years until, on the inclusion in 1891 of the Möng Mit State as part of the area to be policed by the Battalion, it rose to 5 companies. Another company was added to the Battalion in 1895, making 9 companies in all. One company was reduced in 1898 and another in 1910. In 1914 the force was amalgamated with Mandalay Battalion, and placed under the command of an Assistant Commandant. The present strength of the force in the district and the State is 5 companies, of which one company consists of Kachins, recruited for the most part from the Kodaung Hill Tracts.

The Ruby
Mines
Batta-
lion.

At the commencement of 1887, two posts, one at Kyahnyat and one at Thabeitkyin, were held each by 25 men, and during the year three more were established at Kyauklebein, Shwenyaungbin and Kathè.

The next year a temporary post of 20 men was placed at Sinkwa to guard the engineers on the cart-road, but this post, together with Kyauklebein and Shwenyaungbin, was withdrawn in June as the garrisons were constantly sick. A post was established at Male, but handed over during the year to the Shwebo Battalion, while Kyahnyat was transferred to the Katha Battalion, so that at the end of the year only Thabeitkyin and Kathè were held as permanent outposts.

In 1889 a new post was added to the district at Twinne, but was garrisoned by men of the Mandalay Battalion.

Ruby Mines District.

In the following year the five road guards at Wapyudaung, Shwenyaungbin, Kabaing, Kyauklebein, and Kin were converted into permanent posts, the cart-road being infested by robber gangs, and Kathè was abandoned.

In 1891, Yebingyi was garrisoned by 25 men and stockaded, Twinnge, Kyahnyat and Möng Mit were taken over from the Mandalay Battalion, and another temporary post was established at Pyinthabye, south of Kyatpyin. Kin was abandoned in the following year, but five more posts were added at Mabein, Sagadaung, Hsailan, Kunchaung and Lawa in Möng Mit State and four more on the Northern Shan States border in 1893. A few more temporary cold-weather posts were provided in 1894 and 1895, but after the latter date withdrawals and reductions were found possible. In 1907 the Military Police were holding the following posts:—

Thabeitkyin, 75 rifles (50 in the rains).
 Tagaung, 30 rifles.
 Wapyudaung, 15 rifles.
 Kyauklebein, 18 rifles.
 Shwenyaungbin, 30 rifles.
 Kabaing, 15 rifles.
 Kyauktalon, 30 rifles.
 Möng Mit, 55 rifles.
 Molo, 35 rifles (25 in the rains).

Most of the posts, as will be seen, were dotted down the main road from Mogök to Thabeitkyin in order to ensure safety for the insured mails, which were of great value. But some of them were very unhealthily, and in 1908 the inauguration of a tonga service for the mails rendered it possible to abandon Kyauklebein, which was merely retained as a rest camp, and to withdraw the mounted infantry from Wapyudaung and Shwenyaungbin. In the following year the establishment of a motor-car service further simplified the safe-guarding of the mails, as the escort travels with them. The proposal to build a post at Kyatpyin was abandoned, and Kabaing was vacated and held as a rest camp. During 1909 the strength of the Thabeitkyin post, owing to great local sickness, was raised to 75 men permanently, and that of the post at Molo for the same reason to 31 men during the rains. In May 1910 the new post at Shwenyaungbin was completed, while the post at Wapyudaung was reduced to a rest camp. The Kyauktalon garrison was replaced by Civil Police in the same year, and the distribution of the Military Police reached its present

form. At the end of 1910, consequently, the posts held were as follows:—

Thabeikyin by 75 rifles.
 Tagaung by 20 rifles.
 Shwenyaungbin by 21 rifles.
 Möng Mit by 55 rifles.
 Molo by 35 rifles.

The general health of the battalion has improved considerably since the old days, when the men were much exposed in outposts where the buildings were not in good condition, and on escort duty, especially during the rains, as they were not supplied with water-proofs. The death-rate, which in 1888 was 14·65, had gradually diminished to 3·33 in 1910. In the same period the average daily sick fell from 29·98 to 22·6. In 1907 the death rate fell as low as 1·23, and the total annual number of admissions to hospital was the lowest on record for 20 years. The sudden improvement in health in that year was ascribed, firstly to the issue of water-proofs to the men, and secondly to the administration of prophylactic doses of quinine on two consecutive days out of every seven, a system instituted by Captain Good, I.M.S., which has been maintained with beneficial results up to the present time.

The first force consisted of Sikhs, Punjabi-Musalmans, and Hindustani-Musalmans, and some 85 Gurkhas were added in 1888. By 1893, out of a total strength of 850 men, 160 were Sikhs, 295 Gurkhas and 304 Karens. In 1895 some Panthes were enlisted as an experimental measure, and were found excellent, but, though sanction was accorded for the enlistment of a whole company of them and instructions were apparently given to enlist Kachins and other local Hill Tribes, it was not found possible to make much progress, and in 1896 such Panthes as had been recruited were allowed to take their discharge. By 1899 the Karens had been transferred to the Karen Battalion and the bulk of the Military Police were Gurkhas, Garhwalis and other Indian Hill Tribes, about 1½ Companies of Sikhs, Rajputs, etc., being retained for service in the riverine tracts. In 1909 the composition of the local Military Police Companies was as follows:—

2 Companies of Gurkhas.
 2 Companies of Garhwalis.
 2 Companies of Sikhs and Rajputs.
 1 Company of Hindustani Hindus.
 1 Company of Kumaois.

Composition
of
Military
Police.

One company of Gurkhas was transferred to the Northern Shan States in 1910, and further reductions preceded the amalgamation of 1914, which left the district with a sanctioned strength of 5 companies or 565 men in all.

Service in
the field
by the
Military
Police.

For the first two years the Military Police were not engaged in any serious action. But on 16th January 1889 a detachment of the Hampshire regiment under Lieutenant Nugent, when attacking dacoits in the village of Mobôn, 9 miles east of Möng Mit, having lost their Commander and seven men, a composite force under Lieutenant F. O. Anderson of the Military Police, consisting of 55 men of the Hampshires under Lieutenant Ozzard and 20 rifles of the Military Police, attacked the village, killing 20 of the dacoits including their leader Than Ze Hein Se, lieutenant of Saw Yan Naing. The surprise was admirably planned and the Military Police suffered no casualties. On the 14th February of the same year, Bo Nga Maung, the chief adherent of Saw Yan Naing, was reported to have collected a band of between two and three hundred dacoits, and arrangements were made for a force of two Native Officers and 25 rank and file of the Military Police with 25 rifles of the Hampshire regiment, all under Lieutenant F. O. Anderson, Battalion Commandant, to attack him. By a curious coincidence, the dacoits had selected the same night for an attack on Mogôk. Subadar Rattan Singh and nine men of the Military Police were detailed to proceed to Kathe, about seven miles from Mogôk, to call out the ten men stationed there to join the column, so that there should be no delay. *En route*, at the place known as the "Three Pagodas" this party came upon a Shan dacoit sentry who raised the alarm. The Subadar and his party stormed the Pagodas, but were received with a volley which killed a Lance-Naik on the spot. Another wounded sepoy was rescued with great gallantry by two of his companions, and the small party took shelter among the pagodas, and maintained a hot fire until they were relieved by the main body from Mogôk, whereupon the dacoits, who are said to have lost 20 killed and 30 wounded, disappeared into the jungle. Subsequent desertions further crippled Nga Maung's power for mischief. In June 1889 twenty-five rifles, under Inspectors Underwood and Murray, attacked a gang about ten miles from Thabeitkyin, killing eight dacoits and capturing fifteen guns. On the 18th December a party of one Native Officer and 5 rifles was ambushed between Kin and Kabaing, Jemadar-Adjutant Devi Sahai Misser and one sepoy being killed and two men wounded. During 1890

there were five petty encounters with dacoits, and in 1891 a column operating in Möng Mit under Lieutenant Tighe lost one sepoy killed. In 1892 there were several small affairs with dacoits, the most important of which took place on the 21st January, when a party under Jemadar Nasarali, in conjunction with a party of Military Police from Bhamo, attacked and captured a stockade on the Shweli, killing six of the enemy. During 1893 the Military Police provided three columns for duty in Möng Mit State. There were petty encounters with dacoits at various places, the most successful of which was Lieutenant Tighe's pursuit, with forty Mounted Infantry, of Bo Maung and his gang in July. At a fight which took place at Kunlon, Bo Su was killed and four dacoits wounded, and later the same column surrounded some more of the gang, killing Bo Tha Ya and Bo Tin. Since 1893 the Military Police have seen no active service, though patrols and escorts have been provided as required both in the Kodaung and outside the district, especially in the Northern Shan States.

Owing to the destruction of records the early history of Civil Police in this district is involved in a certain amount of obscurity.

The earliest trace of the entertainment of any Civil Police is found in the year 1889, when apparently the force consisted of 60 men including the District Superintendent, 1 Assistant Superintendent and 2 Inspectors. The force was distributed among four posts, Mogök, Shwenyaungbin, Twinnge, and Thabeitkyin. There were slight rearrangements during the ensuing years up to 1892, when the strength of the force was 97 men, the distribution remaining unaltered. In 1893 the force consisted of 1 District Superintendent, 3 Assistant Superintendents, 3 Inspectors, 6 Head Constables, 6 Sergeants and 135 Constables. This increase was due to the assumption of the administration of Möng Mit State, and the posts held by the Civil Police had increased from 4 to 9, namely, Mogök, Shwenyaungbin, Twinnge, Thabeitkyin, Kyahnyat, and Tagaung in the district proper, and Möng Mit, Sagadaung and Maugôn in the State, Shwenyaungbin and Sagadaung being outposts. These posts continued to be held during 1894-95. In the latter year Inspectors and Head Constables were reduced by one each, while the number of Sergeants was increased to 9 and of constables to 143.

It was in 1895-96 that the Military Police garrison reached its maximum strength, and the efforts of the regular garrison were supplemented in various ways in order to deal

with the unsettled state of affairs on the main routes. The Hein of Nyaungdauk was given 20 guns, and the Lishaw villagers of the Bernardmyo plateau were also armed. At an earlier date there were also special village police at Kathe and Kyatpyin, who were paid direct by the villagers. A Myoôk was placed on special duty to deal with local gangs, and as many as 6 Assistant Superintendents of Police were sanctioned, 2 being required as reliefs in case of sickness. By 1899 the district had settled down.

With the gradual disappearance of organized crime the number of Military Police posts was considerably reduced and the Civil Police force was distributed as follows:—

Kyatpyin 15, Tagaung 15, Kyettagaung 15, Thabeitkyin 28, Twinnge 20, Chaunggyi 15, and Mogôk headquarters 78.

There was also a separate force for Möng Mit State, controlled by the District Superintendent of Police, but paid for by the State, consisting of 69 men distributed as follows:—

Möng Mit 39, Sagadaung Outpost 10 and Maugôn 20.

Chaunggyi was abandoned in 1901. In the following year 2 Sergeants and 5 Constables were sanctioned for the Kodaung, special allowances were provided for the Thabeitkyin garrison and 30 men of the force (10 in Möng Mit) were mounted. The pay of the Kodaung police was raised in 1905.

The proposals for re-organization following the deliberations of the Police Commission coincided with a boom in the ruby trade. Between 1901 and 1906 the population of Mogôk had increased by 50 per cent., and the area of the town had been more than quadrupled. It was accordingly proposed (1905) to establish an outpost in support of the headquarters police-station. The men for this post and for the new Police-station at Shwenyaungbin were to be provided by a reduction of the other posts, especially Thabeitkyin and Twinnge, where crime was light. The total effective force sanctioned was 240 of all ranks. The Möng Mit force, which had been reduced to 67, was declared to be part of the district force, though the *Sawbwa* had been installed in 1906, and the State was required to pay a contribution. In 1910 this force was found to be more than sufficient for the needs of the State and was reduced by 3 Sub-Inspectors, 1 Head Constable and 27 men, Sagadaung (now Nabu) being reduced to an outpost and Maugôn abolished. In the following year it was decided to establish a Civil Police Outpost at Kyauktalôn, the Military Police

post having been withdrawn, and this was done without an increase of the force, as the ruby trade had fallen on evil days, the population of headquarters was much reduced, and the proposed outpost in the town was found to be unnecessary. A further reduction in 1912 of the Möng Mit force by 1 Head Constable and 4 Constables brought the combined district force to its present strength, the only other alteration in the arrangements of 1907 being that the Kyettagaung Station has been moved to Inywa.

Up to the year 1906 there was only a Central Police lock-up at Mogök, the prisoners being sent down to Mandalay Jail in batches from time to time. The present jail cost Rs. 1,13,780 and provides accommodation for 110 male and 4 female convicts. There is also a juvenile ward. The average daily jail population for the first five years was 68 and the net cost per prisoner Rs. 161 per annum. The cost of maintenance has been considerably reduced by the development of jail manufactures and the establishment of a garden, but the high price of paddy and other foodstuffs, almost all of which have to be imported, operates to keep the figure well above the Provincial average.

The rate of mortality per thousand has been as high as 40. A considerable number of the admissions are Mainghas of the coolie class, who arrive in a very anaemic and debilitated condition.

Since 1912 prisoners from the Northern Shan States with sentences not exceeding 5 years are admitted to the Mogök jail, which is now (1914) fully occupied. Prophylactic doses of quinine during the rains have had a marked effect in reducing malaria. The water-supply is obtained from the town reservoirs and is excellent, and the Yeni chaung provides irrigation for the jail garden. There is considerable difficulty in finding suitable work for the prisoners, the main industries being carpentry, bamboo and cane work, paddy husking and stone breaking.

The Ruby Mines District (including the Möng Mit State) was placed in charge of an Assistant Engineer as a temporary measure on its formation, and then became a separate executive charge, which was abolished in April 1902. It was then converted into a subdivision of the Mandalay Division and has ever since been held by an Assistant Engineer. With effect from January 1910 the subdivision was transferred from Mandalay to the Bhamo Public Works Division; from 1st May 1911 it was subordinated to Shwebo, and in 1914 was once more attached to the Mandalay Division.

Public Works.

Practically the only work of any magnitude that has been carried out has been the construction of the Mogôk-Thabeitkyin road, popularly known as the tonga road, the evolution of which from a mule-track to its present form has already been described.

Bernardmyo was abandoned as a Military Station in 1899 and the buildings sold. In the same year the district Court-house was burned, and the new building was completed in the following year at a cost of some Rs. 50,000. The first Military Police barracks had been built at Mogôk in 1891-92 and a considerable amount of money was spent in housing the outposts along the road. Two years later the Military Police barracks at headquarters were improved by the substitution of corrugated iron and planks for thatch and mat walling, and the lines were rebuilt on a new site between 1897 and 1899, the sanctioned estimate being over a lakh of rupees. The present rifle range was not completed till 1904. The Civil Police *thannas* at Mogôk (destroyed by fire in 1896), Thabeitkyin and Tagaung were built in 1894-95 and the latter place was provided with a proper Court-house. The Civil Hospital (Rs. 22,500) at Mogôk was completed in that year and the Military Police Hospital in 1895-96, but the latter was rebuilt on its present site 10 years later. In 1898-99 the new *thanna* was built at Mogôk, the old armourer's shop converted into a district Record-Room and a new lock-up (to be the nucleus of a jail) was begun. The jail was commenced in 1902-03 and was finished in 3 years. The Mogôk waterworks are ten years old. The supply is obtained from a perennial stream 1½ miles away, and is stored in two reservoirs close to the Deputy Commissioner's house, with a supplementary tank above the Gyawtaung bazaar. The cost of the original scheme was Rs. 50,000, and considerable extensions and improvements have been made since. In 1908 the suspension bridge on the Mainglôn road at Kyauktalôn was completed. This route had been surveyed for a cart-road five years earlier, but it has not yet emerged from the mule-track stage, though it is open to carts from the Nampe stream to the Railway. A *pucka* bridge over the border stream had been built in 1899-1900, half the funds being provided by Hsipaw State. The hospital at Thabeitkyin was ready in 1908 and a European ward was added to the building at Mogôk in the same year. Dâk bungalows on the main road and quarters for the various Civil Officers were built gradually during these years as funds where available.

CHAPTER X.

REVENUE ADMINISTRATION.

In Chapter II has been described the state of affairs as they existed in Burmese times prior to the annexation. The present district is composed of sections of a large number of different Burmese jurisdictions, and the revenue system was not uniform.

In what is now known as the Mogök Subdivision the *thatthameda* system which prevailed in other parts of Upper Burma was not in force. The Stone Tract was treated practically as a private appanage of the Burmese kings, and the right to obtain revenue therefrom was farmed out, the *so-thugyis* being unrestricted both as to the total amount of the revenue to be raised by them and in regard to the methods by which they raised it, so long as they produced what the lessee required. As a consequence, the demands on the people were irregular and capricious, and just prior to the annexation, when Nga Si, afterwards Mogaung *Wun*, held the lease, the people were so much harassed to meet his demands that there was serious danger of the whole of the tract being depopulated.

Mogök
Subdivi-
sion.

The *so-thugyis* were appointed by the Crown, or by Ministers in the King's behalf. Their function was to collect and arrange for the ruby revenue, just as *myo-thugyis* or *thugyi's* collect other revenues all over Burma. They wielded wide magisterial and administrative powers, and sometimes they were for years together the only representatives of the Government or of authority on the Ruby Mines plateau. For some years before the annexation the mines were managed direct on behalf of the King by a Mandalay nominee, or farmed to the highest bidder, but the revenue was still collected through the *so-thugyis*, who were generally given a free hand so long as they produced sufficient money.

So far as can be ascertained the total revenue obtained by King Mindon from the Ruby Mines during the time his officials managed the mines direct was about one lakh of rupees a year. King Thibaw obtained a somewhat larger sum by leasing the mines, but his attempt to get $2\frac{1}{2}$ lakhs nearly ruined the industry.

The sources from which the lessees or *so-thugyis* obtained sufficient to satisfy the demands from Mandalay have been described in Chapters II and V. It would

appear that there was no tax on land as such, and no distinction between *aradaw* and *bobabaing*. The chief source of income was the house tax, which varied from Rs. 3 to Rs. 35 a month, the proceeds being lent to merchants at enormous interest. The lessee had the option of purchasing all stones, and in practice had a good deal to say to the valuation. On unsold stones the owner had to pay Re. 1 "Seal tax" and annas 8 for an export permit, besides 25 per cent. on the estimated value, after which the parcels were sent to the Ruby Hall at Mandalay. Taxes on bazaar stalls and gambling houses provided further sums. But the possession of cultivated land subjected a man to no direct tax, though it no doubt afforded an excuse for a little extra squeezing.

*Introduc-
tion of
Land
Tax.*

It would seem that the earlier Deputy Commissioners failed to realise that the conditions of the Stone Tract were peculiar. An artificial distinction between "hereditary" and "royal" land was introduced, though it was without historical justification, and differential rates of revenue ($\frac{1}{10}$ th and $\frac{1}{4}$ th outturn respectively), were proposed. The small area near Mogök in which private rights are admitted has now been defined, and since 1899 this has been assessed at 10 per cent. and the remainder at 15 per cent. The 10 per cent. rate was also for some years applied to *taungyas*, but the difficulties of assessing the outturn and the insignificance of the resulting revenue led to the substitution in 1897 of a fixed rate of Rs. 2-8 per family engaged in this form of cultivation.

The system of taking a percentage of the outturn (converted into money at the current price) also applies to gardens and miscellaneous cultivation. The estimates of outturn are made in the first instance by the *thugyis*, and are not reliable. An attempt is made to check these estimates by a series of crop-cuttings and measurements, but conditions vary enormously according to the aspect of the land and the facilities for irrigation.

*Thatha-
meda.*

The normal rate is Rs. 10, though reductions have been sanctioned in bad years. In Mogök Town the rate is redistributed by classes. The employés of the Burma Ruby Mines Company pay at the rate of 4 pies in the rupee on their annual salaries, and the excess over the amount which a Rs. 10 rate would produce goes in relief of the poorer residents. Maingtha coolies employed by the Company pay Rs. 5 if married and Rs. 2-8 if single. Casual immigrant coolies pay a uniform rate of Rs. 2-8 and all domestic servants Rs. 2. The taxation of the employés of the Bombay

Burma Trading Corporation, who are scattered in isolated camps in the forests, presented difficulties which were only overcome after several experimental systems had failed. The Corporation now undertakes the collection, which is at the rate of 4 pies in the rupee on salaries between Rs. 20 per mensem and Rs. 1,000 a year, and a fixed sum of Rs. 4 on salaries below Rs. 20 a month. On incomes of Rs. 1,000 per annum and over income tax is paid by those employés who are resident but not domiciled in Upper Burma.

The Revenue system of the riverine portion of the district varied slightly in the various jurisdictions. As explained in Chapter II, the present Tagaung Township contains the *cis-Irrawaddy* portion of the old Myadaung *wunship* plus the old Tagaung *myothugyiship* which adjoined it on the south. According to all local accounts uncultivated waste land was the King's, and the *wun* or *myothugyi*, as his agent, allotted it to those who wished to make clearings. On the establishment of a village the land was held on a tenure of which the following were incidents:—

Revenue
system of
riverine
tract.

(a) When the land was cleared it was still *asoya* land, in the sense that it ultimately bore the burden of taxation, whence the system of assessing the *thathameda* (at first sight a purely personal income-tax) according to the *kyedan* system, on the amount of (communal) land held by each inhabitant.

(b) On the other hand the land was, so far as the individual was concerned, *dama-u-kya bobabaing*, that is, the original clearer and his heirs could retain the land and continue to hold it, subject to the very important proviso that they remained inhabitants of the village and cultivated the land to its proper capacity, so as to be able to bear their share of the village taxation.

(c) If a man left the village, he thereby at once forfeited all right to his land however long he may have held it, or for however many generations it may have been in his family.

(d) Sales, mortgages and leases of the land were forbidden and invalid with the single exception that—

(e) When any portion of the communal land in any one village unit lay idle and was not required by any member of the unit, the *gaung* could lease it to any stranger, not a member of the village community, on a rent which was usually 10 per cent. of the outturn in the case of *kaukkyi* lands and 20 per cent. in the case of *mayin* fields, but the lease was only a temporary one from year to year till a

villager required the plot. The rent paid by the stranger went towards reducing the total revenue demand on the village.

(f) Further, as an additional proof that it was the land itself that was looked on as being the subject matter of taxation, the *gaung* had always the right, should any holder of communal land be unable at any time to work the land to its full capacity so as to bear his proportionate share of the village taxation, to take away such portion as he was unable to fully cultivate and give it to some other villager who would and could, and who was ready to pay the proportionate assessment thereon according to the *kyedan* system.

This was the prevailing tenure. Exceptions were recognized in the case of holders of lands in Myadaung, Aungtha, and Ngaledéik in the immediate *entourage* of the *wun*, who for himself and his privileged followers claimed, in defiance of the communal system, to own lands within the limits, not only of Myadaung itself, but of the neighbouring villages of Tawya, Thabyehla, Satsa and Pongongale.

Even in these cases the privileges were restricted.

The holder could lease the land and obtain rent even though not living in the actual village in which it lay, but he had to offer the lease first to the inhabitants of that village, and only on their refusal could he offer it to an outsider. He could sell or mortgage the land only to a man belonging to the villages of Myadaung or Aungtha or to the village within which the land lay; and if he went elsewhere without selling or mortgaging his land before his departure or giving it to another resident villager, the land could be re-allotted by the village *thugyi* to a resident and once more, apparently, was included within the category of ordinary village communal land. It seems clear that in Burmese times there was no distinction between *bobabaing* and *ayadaw* in the sense which attaches to the former an unrestricted right of disposal, though it was used in connection with the term *dama-u-kya* as implying that a particular plot had been held by the original clearer and his heirs without interruption. But though mere length of occupancy gave no extended rights, and though land once permanently cleared belonged to the village unit and became *ya-a-bon-mye* or *thu-win-nga twet*, the first tenure enquiries (about 1893-94) proceeded on the assumption that the only known forms of tenure were *ayadaw* and *bobabaing*, as recognized in the central tracts of Upper

Burma, and on proof of 12 years' continuous possession *bobabaing* rights were recorded. These claims have since been scrutinised and the "private" lands have been finally mapped. The communal tenure, though recognized as existing, has not been defined by law, and those lands in which no private rights were admitted are officially *ayadaw*. Considering that at the time of the enquiry it was understood that the latter was to pay (as it still does) a higher rate of revenue, it is surprising that claims to *bobabaing* rights were not more numerous.

The land was regarded as the object taxed and the standard whereby assessment was made, and each plot cultivated had a specific *aliquot* part of a rupee assigned to it, as representing its taxable capacity as compared with the other village lots. This was called the *kyedan* system. Though *thatthameda* was assessed, in theory, on the number of households contained in the village, as a matter of fact no correct return of households was ever made or submitted. The *thugyis* (or as we should call them rather *gaungs*) were assembled together at Myadaung once a year. There, the amount which the Myadaung jurisdiction was required to produce having been ascertained, the *thugyis* distributed its incidence amongst themselves on behalf of their villages, each guaranteeing to be responsible for so much, roughly according to the size and prosperity of his village.

This sum was again distributed by the elders among the villagers, on a consideration of the relative rating valuations of the amount of communal land in the hands of each. Thus a villager holding a *tagyat daing le* or "one rupee field" would ordinarily pay four times as much as one who held a four-anna field (*ta mat kye*), and eight times as much as one who held a two-anna field (*ta-mu-kye*.)

An additional tax on all *ledaw*, that is, on all cultivated land other than that in the hands of the *wun* himself or of his more influential followers, was levied in kind at the same time as the *thatthameda* and the demand was distributed in the same way, but the poorer and more remote villages escaped this additional impost.

The vicissitudes of the Shweli *atet-paing* and *auk-paing*, which have been described in Chapter II, were unfavourable to the enforcement of any regular administration. There is hardly a village which has had a continuous existence since Burmese times. All the old land-holders have disappeared and the communal system, which depends on the continuity of the village, has fallen into desuetude. *Mayin* lands seem to have paid a special impost in

Burmese times in addition to the *thathameda*. No private rights have been recognized or claimed.

**Tagaung
myo-
thugyi-
ship.**

In the Tagaung *myothugyi* ship the system of communal land tenure obtained, with much the same incidents as in the case of Myadaung, and here, also, some of the inhabitants of the chief village claimed, in defiance of the communal system, to hold as their private property certain lands (known as *kyèbaung* land) within the jurisdiction of Pongan and Magyigon. These claims, to the number of half a dozen, were admitted and registered as *bobabaing* in 1893-94, though the holders enjoyed no immunity from taxation in Burmese times, and had no stronger title to special treatment than the fact that they were found in possession of almost the only culturable land in the jurisdiction.

Thathameda was assessed on the system already described, but the Tagaung landlords paid their share at headquarters, and their tenants were assessed only in respect of such communal land as they occupied.

The original title was probably pure "grab" on the part of some official or friend of the *myothugyi*, whom it was dangerous to oppose. The land passed by inheritance and its real status was obscured and forgotten.

**Hintha-
maw
myo-
thugyi-
ship.**

The original tenure of land was practically communal, and revenue was assessed according to the number of pairs of buffaloes required to plough it. In addition there were miscellaneous imposts—on timber and bamboo extraction, on fishing nets and weirs (in kind) on bazaar sales (a handful out of each basket) on horse deals ("4 annas per head and 4 annas per tail"), cattle sales (25 ticals of copper) and on the mortgage and redemption of slaves.

The communal system remains in force on the west of the river (where culturable land is scarce) but on the east side, probably owing to the security afforded by tank irrigation, a limited right of private property in land (*kobaing*) had grown up before the annexation. All waste land and land not under permanent cultivation was still regarded as State land, and when a man wanted to make a fresh clearing for permanent cultivation he had even to get the *myothugyi*'s (not the local village *thugyi*'s) permission, but when he had so cleared he seems to have acquired a permanent heritable and transferable right in the land, subject to the restriction that it could be sold or mortgaged only to another resident of the same *myothugyi*'s jurisdiction.

If a tenant of *kobaing* land, who was usually by custom an inhabitant of the village where the land lay, made an extension of cultivation, the extension became part of the

original holding, and could not be treated by the tenant as his own, and there seems to have been a local custom that a holder of *kobaing* could prevent any other person making any fresh clearing anywhere in the vicinity of his land, so as to retain room to expand his holding.

In these circumstances there was at least some justification for the admission of private rights in land, though its formal recognition as *bobabaing* ignores the old restriction of alienations.

The conditions in the Kyahnyat *myothugyi* ship were very similar, the same distinction between east and west obtained, and tenures developed on the same lines. The lack of culturable land within their own boundaries and the operation of the residential rule for tenants have resulted in the accumulation of much of the rich land of Shwesaga, Yegya and other villages in the hands of the wealthier inhabitants of Kyahnyat, Myintha and even Twinnge, whose proprietary rights were confirmed by the enquiries of 1893-94. The evolution of private rights in land is comparatively of recent date and at the time of the *Sittan Sayin* (1145 B.E.) all land was *min mye*, the property of the King.

Kyahnyat,
Daung-
bon,
ngaywa
and
Twinnge
kayaings.

In the period immediately preceding the annexation *thathameda* was the only tax levied.

The area covered by these *kayaings*, formerly belonging to Möng Mit State, was finally merged in the Ruby Mines District in 1889. Throughout the whole of this area the universal and sole form of land tenure was the "pakondan-mye", which was strictly communal. The *kayaing-ðk* (after consulting neighbouring villages and obtaining their assent), indicated generally where a new settlement might start, but once this was done matters in regard to the land lay entirely in the hands of the local *thugyi* and villagers.

The original clearer could retain his plot and pass it on to his heirs, but only so long as he or they resided in the village and were in a position to cultivate the land properly and pay the share of taxation calculated thereon according to the *kyedan* system.

If they at any time failed to do this, or removed even to the next village (though it might be under the same *kayaing-ðk*) they lost all claim to the land, which the *thugyi* re-allotted to some other resident villager. Nor could either the widow or the heirs of a deceased villager, who had lost the paternal plot through his being unable to work it after the husband's or father's death, claim to be re-instated should their fortunes improve later. All they

could claim, when again in a position to cultivate, was to obtain a share of the village land on the footing of newly arrived strangers.

No sales, mortgages, or tenancies were ever recognized even between residents of the same village. The system, which is much like the Russian Mir system in its simplest form, except that all the lands were not lumped together and periodically re-allotted, for the most part survived unimpaired. The harshness of the rule of forfeiture for inability to cultivate was sometimes modified by the concession of a period of grace, during which another villager worked the plot, but the original holder's rights lapsed after two years.

Thathameda was the only tax at the annexation. Although in one or two villages the *bababaing* (10 per cent.) rate of land revenue has, for no ascertainable reason, been assessed for many years and has resulted in a certain amount of land-grabbing by outsiders, the communal system retains its vitality throughout the greater part of the two *kayaings*.

Most of this Burmese jurisdiction lay west of the Irrawaddy and is now in the Shwebo District, only the area covered by the 3 village tracts of Nyaungyin, Sabenago and Gwebinhmaw lying within this district. Owing to the poverty of the soil, in Burmese times the inhabitants of the two latter villages lived by timber trading, and although there used to be some paddy cultivation at Lebya and Htanbinle-daw south of Gwebinhmaw the original village there was deserted and the lands abandoned before the annexation. All cultivated lands in Sabenago and Gwebinhmaw jurisdictions are at present admittedly State and treated as such.

It was only in Nyaungyin that, in Burmese times, permanent paddy cultivation was practised. No communal land tenure custom appears to have obtained, and anyone who wanted to cultivate anywhere had simply to get the *myothugyi*'s permission. Once cleared, the land belonged solely to the original cultivator, who could pass it by inheritance or dispose of it in any way he pleased. The natural consequence was that all the land in Nyaungyin fell into the hands of the rich people of Male and Sabenago, and now there is only one villager of Nyaungyin who owns lands in that village. All the permanently cultivated land is now assessed at *bababaing* rates. The only tax in Burmese times was the *thathameda*, levied in the ordinary way by *thamadis* on assumed income, and not by the *kyedan* system.

Wapyudaung
Kayaing.

The Wapyudaung *kayaing* comprises the village-tracts of Wapyudaung, with its hamlets of Posa, Nyaungbintha

Sabenago
or Male
myo-
thugyi-
ship.

and Kyaukhlebein. It belonged formerly to Mōng Mit State, adjoined the Twinne *kayaing*, in whose jurisdiction it is said to have been originally included, and was subject to the same *pakondan* system of land tenure, which, however, has been somewhat weakened in Wapyudaung and Posa by ill-advised action after the annexation.

On the east of the river, the only portion of the old Burmese jurisdiction which lies in this district, the people lived mainly on timber trading, or acted as middle men and carriers on the road to the Ruby Mines, and the *myothugyi*s secured their dues in the form of fees for permits to extract bamboos and timber, and *pwe-gun* or broker's tax on the transactions of the traders. The *ywa-ōks* under the *myothugyi* paid him annual sums of Rs 25 to Rs. 50 and recovered what they could from the traders by levying petty fees on all trade transactions at the riverine villages. The *thatthameda* was the only tax levied, but the villagers had also to pay a special cess to defray the expenses of the *myothugyi*'s annual journey to Mandalay. In Onson, the only village where any permanent cultivation was practised, the communal *pakondan* system prevailed, as in Twinne and Wapyudaung, and State land rates are assessed throughout the jurisdiction.

Throughout the Theingadaw *myothugyi*'s jurisdiction the cultivators were liable to be called on to provide materials annually for the repair of the celebrated Theingadaw Pagoda, free of charge.

It appears, therefore, that before the annexation no land tax proper was levied in the district except in a portion of the Myadaung jurisdiction, and even the *thatthameda* tax is a comparatively modern institution. The Stone Tract had its special form of taxation. In the riverine tracts (according to the statement of U U whose father, U Yo of Tigyain, was clerk to the *kyaukmyo wun*) it was not till 1218 B.E. that the old *kunbodaw*, paid by the *myothugyi*s in silver by weight, was superseded by *thatthameda*, which at first was collected at the rate of Rs. 3 per house. Three years later it was doubled, the next year it rose to Rs. 8, and in less than ten years from its institution it reached Rs. 10.

Land revenue was introduced at Myadaung in 1231 B.E. and was at first collected in kind. The rate was nominally 10 per cent. of the produce, but the *wun* exacted double this amount and pocketed the surplus, as he did also in respect of the miscellaneous taxes, the *authorized* rates of which were on timber Rs. 3 per *atha*, bamboos As. 8 per 100, canes As. 4 per 100, *indwe* As. 4 per viss.

Thein-
gadaw
myo-
thugyi-
ship.

Before
and after
the an-
nexatio n.

It is not possible now to estimate the amount produced by these various sources of revenue.

After the annexation the first step in the way of taxation was to collect *thatameda*, and this was followed by an assessment of 10 per cent. on all permanently cultivated lands. It is not clear whether any distinction in respect of revenue was actually made between *bobabaing* and *ayadaw*, though differential rates were proposed. The existing, rates—15 per cent. on State land, 10 per cent. on *bobabaing* and Rs. 2-8 per family on *taungyas*—have been in force since 1899.

Revenue
of district
under
British
adminis-
tration.

Apart from the receipts from minerals, which have fluctuated between four lakhs and a lakh and a half, the revenue of the district is insignificant. *Thatameda* exceeded a lakh from 1904 to 1907 but has fallen off owing to the concession of reduced rates, and land revenue proper shows little sign of expansion in 10 years. Fisheries produced twenty thousand rupees, until the more important ones were transferred to Katha.

Town
Land
Rents.

In the early days of the British occupation the question of the tenure on which land was held seems to have been considered only from the point of view of culturable land. New house sites were occupied either without authority or with the verbal permission of the Deputy Commissioner. As the population increased, houses appear to have sprung up on part of the paddy land which was classed as "hereditary" (see page 110), and to this day sites which are assumed to have this origin pay no rent. Parts of this area have been acquired by the Burma Ruby Mines Company and the occupiers were accommodated in the new quarters of Kyudawmi, Satongon and Lawma, which were laid out on the higher ground (1902–04). Although there has been no final adjudication in the matter of tenures, the bulk of the house sites are now held on formal leases, for which a graduated scale of rents has been devised. No new lease is issued without reference to the Agent of the Company, and at Kyatpyin and Kathe, which are not towns, the *thugyis* are required to refer all applicants for house sites to a revenue officer in order that the Company may have an opportunity of objecting if the land is likely to be required for future operations. The town of Mogök, as defined for revenue purposes in Revenue Department Notification No. 42, dated 15th June 1910, has now been fully demarcated.

Opium
Adminis-
tration.

At the annexation and for 5 years after, opium was merely one of many trade goods. The rules of 1890 prohibited sale to or possession by Burmans, and in April 1891

Government declared a monopoly in this district. Experimental shops were opened at Mogök and Kyatpyin covered by a single license, and were given to a selected vendor who imported and stored his own stock and was required to pay Government a small monthly fee *plus* duty at Rs. 15 per viss on the opium he imported. In April 1892—and yearly thereafter, down to April 1904—the single license for both shops were disposed of by auction, the rate of duty being raised to Rs. 17 a viss. During this time the licensee was twice convicted for fraudulent practices. Despite the restrictions imposed by his import pass and the storing of his stock in the treasury, it became apparent that he valued his license chiefly for the opportunity it afforded him of making large profits on opium which neither paid duty nor appeared in his accounts of retail sale, but was exported wholesale to dealers in Lower Burma. The license was in the hands of one man for 9 out of 13 years, and smuggling was rampant. In 1904 the experimental Lower Burma system was extended to Upper Burma, and selected vendors were appointed at a fixed fee to each shop, with a Resident Excise Officer to supervise sales and an Excise staff to check illicit practices. Restrictions were imposed on the amount of each purchase, which had hitherto been subject to the same maximum as legal possession—3 tolas—and an elaborate system of registration has since been evolved with the object of making the rules effective. Subsequently it was found necessary to provide legislative checks on den keeping and hawking. Until April 1912, the shops continued to sell foreign opium which—except during the last 9 months of 1907-08 when Government tried and abandoned the experiment of importing through contractors—was imported by the licensees. Since that date, and with the exception of small quantities of confiscated foreign opium, all shop stocks have consisted of excise opium supplied at Rs. 50 a seer to the licensees. The substitution of excise for foreign opium accounted in the first year for an increase of Rs. 64,000 in opium revenue. The retail rates at which the licensee is required to sell had been 8 annas and 12 annas per tola for raw and cooked opium, respectively, and were raised to 12 annas and 1 rupee in 1910. In 1912 they were fixed at 14 annas and Rs. 1-2 for excise opium. After the installation of the Chief in 1906, the State of Möng Mit was for some years subject to a special set of rules in respect of opium and a generous limit of private possession was permitted. It has now been brought into line with the district proper and is subject to the District Excise staff, towards the maintenance

of which it pays an annual contribution. The hill tracts of the Kodaung still enjoy comparative immunity from opium and excise restrictions.

The Excise staff consists of one Superintendent, two Inspectors, six Sub-Inspectors, fourteen peons and three Resident Officers, of whom one is also the Warehouse Officer, Mogök. One Inspector and two Sub-Inspectors were added to the strength in 1907, and in 1912 the staff was placed on a permanent footing.

The cost of the staff in 1913-14 amounted to Rs. 32,129, of which a sum of Rs. 3,505 was recovered in the form of a contribution from Mōng Mit State.

Liquor licenses. In 1887, *i.e.*, a year after the annexation, Government made a monopoly of the liquor industry and for a small yearly fee left the business, unbampered by regulations, where it found it on arrival, in the hands of a party of Maingtha butchers of Tayktan quarter. In 1891 the monopoly passed to some Panthay merchants, who under a single license established two shops, one at Mogök and the other at Kyatpyin, each of which supplied country liquor as well as country (outstill) spirit.

In the following year a second license was issued for foreign liquor and spirit, and in 1893-94 a third and fourth license for Dyer's beer and spirit, respectively, and the licenses were for the first time disposed of by auction. In 1896-97 the license for country fermented liquor was separated from that for country spirit, and fourteen years later outstill country spirit was displaced by Contract Distillery spirit, for which licenses were issued at Mogök and Kyatpyin, the spirit being warehoused at Mogök under the charge of the Resident Excise Officer.

Opium revenue. In the early years opium revenue was made up of a license fee realised by auction for the bare right of sale, an import duty payable at a fixed rate per viss, and the sale proceeds of confiscated opium which the licensee was required to buy at fixed prices. The illicit profits of the licensees and of smugglers were known to be very heavy, but the real value of the monopoly was unknown. With the introduction of the new system in April 1904, auction fees gave place to fixed fees, which were pitched low in the first instance, as an inducement to licensees to further the Government policy of securing the maximum of revenue from the minimum of consumption. The other two factors of opium revenue remained unchanged for a further period of 8 years. In April 1912 import by licensees was stopped and foreign opium stocks were replaced by excise opium. With this

change import duty disappeared, and was replaced by "Wholesale Treasury Rates for Excise Opium." The price at which Government sells opium to the licensee and the price at which he is allowed to resell it to consumers are so adjusted each year, that the difference in the licensee's favour may cover his estimated working expenses and a fair wage for his services. The residue is taken by Government in the form of a license fee. In the five years preceding the introduction of the new system the receipts from opium averaged nearly Rs. 28,000. They rose steadily till 1907-08 when they reached over a lakh of rupees, but dwindled again to Rs. 32,000 in 1911-12. The substitution of excise for foreign opium resulted in an immediate recovery and the treasury receipts for purchase of opium alone were nearly Rs. 90,000 in the first year.

Liquor licenses have from the beginning been disposed of by auction, though the question of adopting fixed fees for some of them has been discussed. The highest revenue obtained from license fees was in 1899-1900 when they reached Rs. 38,000. Ten years later they had fallen to a third of this sum, but since then there has been a recovery, which is only partly due to the introduction of a new source of revenue, namely, the duty on Contract Distillery spirit. In 1912-13 liquor receipts again exceeded Rs. 30,000.

CHAPTER XI.

LOCAL SELF-GOVERNMENT.

There is no municipality in the district. The sanitary and other requirements of Mogök are supplied by the District Fund, to which it is the chief contributor.

The average income of the District Fund for the last fifteen years has been Rs. 52,172 and the average expenditure Rs. 51,298. The main sources from which it derives its income are bazaar and bazaar stall rents, slaughterhouse licenses in Mogök and Kyatpyin, and a portion of the fees for the lease of the ferry at Thabeikyin, the proceeds of which are shared with the Shwebo District. The main heads of expenditure are civil works, on which an average annual expenditure of nearly Rs. 37,000 has been incurred, and conservancy on which a little over Rs. 13,000 is spent. The Fund also undertakes the planting of roadside trees, and employs a mosquito brigade during the

rains in addition to the permanent conservancy staff. Nine district bungalows, three bazaars, five slaughter-houses and sixteen cattle pounds are maintained. The chief expenditure has been incurred on Mogök town, from which the bulk of the District Fund income is obtained, and the gradual shifting of the town to new sites on the hill slopes in consequence of the extension of the Burma Ruby Mines Company's workings necessitated a heavy outlay on sanitation, new roadways, and water supply. The water-works, which provide a pure and ample supply, were constructed and are maintained by the Fund, which has also contributed from time to time for urgently necessary improvements in hospital accommodation, for which provincial funds have been unable to provide money. The staff includes a District Fund Overseer, who is also a Sanitary Inspector, and has charge of the various conservancy, bazaar and slaughter-house establishments, with a fitter to help him in the upkeep of the water-works. Small conservancy gangs are maintained at Kyatpyin and Thabeitkyin, and at Mogök and Kyatpyin (the only two places where there are regular bazaars from which fees are obtained) there are special establishments of bazaar sweepers which are paid by the lessee. The District Fund was most flourishing in the year 1907-08 when the income reached Rs. 67,000. Since that date, owing to the ruby slump, there has been a considerable fall in the annual revenue, the bazaar receipts, especially, reflecting the state of the ruby market.

Kyatpyin has a separate water-supply and a scheme for Thabeitkyin is projected.

During the last three years it has been found possible to provide funds for roads, etc., further afield, and a considerable sum has thus been spent on the improvement of that portion of the Möng Mit-Twinnge road which lies within the district.

CHAPTER XII.

EDUCATION.

From an educational point of view it must be confessed that the district is backward. The census figures for literacy do not separate the district from Möng Mit State, where the bulk of the ignorant Palaungs and Kachins live,

but it may be taken that 70 or 80 per cent. of the population is illiterate.

In 1890 the district shared a Deputy Inspector of Schools with Bhamo and Katha, and in 1900 with Shwebo. Until 1905 it had no separate educational officer and a Deputy Inspector was not appointed to the charge of the district till 1910, when the two itinerant teachers who had been employed were dispensed with.

Progress, though very slow, has been fairly steady, such checks as have been experienced being mainly due to the vicissitudes of the ruby market.

Between 1905 (when some measure of real supervision was first given) and 1910 public schools increased from 23 to 40 and the attendance of both sexes from 900 to 1,200, and though private schools did not increase much in numbers the attendance nearly doubled.

In 1914-15 there were 49 public schools with an average daily attendance of 1,482, which would have been considerably higher but for the collapse of the ruby market. In the same year private schools numbered 113 with 1,135 pupils.

The Government Vernacular Model School at Mogök was opened on 1st February 1906 and at the end of a year had 160 pupils (88 girls). The school was graded to the fifth standard in 1913-14, when the average attendance was 89 boys and 79 girls, and has since been raised to the seventh standard, with six teachers paid by Government.

The Arahan S. P. B. School was established at Mogök in 1902 by a committee of the chief residents, and at first achieved considerable success, but it was hard hit by the slump of 1908, and though assisted by Government is now struggling for existence. It teaches up to the sixth standard.

Decent school buildings have to a considerable extent replaced the *zayats* of earlier days and schools have been erected at the following places at the expense, wholly or partly, of Government:—Peikswe, Gyawtaung, Kyatpyin (two), Thabeitkyin (two) Sabenago, Tagaung and Kyettagaung. Further assistance is afforded by salary grants, of which 23 were paid to teachers in 1914.

The private or monastic schools are, as elsewhere, conservative and antiquated in their methods, and the *póngyis* are for the most part unwilling to submit to the State system. Most of the public schools are supported by a local committee of elders, who do not, however, show much zeal or activity.

CHAPTER XIII.

PUBLIC HEALTH.

The district. The district generally is regarded as unhealthy, though its reputation in this respect has improved since Burmese times, and the Mogök valley itself has been much improved by draining and reclamation. For Europeans the climate of the hills is delightful except in the rains, but malaria is very prevalent amongst Indians and Burmans, and hill diarrhoea and other bowel complaints are common to all classes. Ophthalmia and various skin diseases also afflict the indigenous population, whose ideas of domestic hygiene are primitive.

Cholera. Cholera is practically confined to the riverine tracts, and there was a serious epidemic in March 1911, when the disease was imported to the kheddah camp, and out of 95 cases in Tagaung township two-thirds were fatal.

Plague. Two fatal cases of plague occurred at Inywa in April 1911 and there is constant danger of infection from Mandalay and Katha. Early in 1914 Myadaung and other villages were seriously attacked, several deaths occurred in Thabeikyin and elaborate measures (fortunately successful) were taken to protect the crowded villages of Mogök valley.

Small-pox. Vaccination, though not compulsory, is not unpopular, and the mortality from small-pox is insignificant. Some 3,000 primary vaccinations are performed annually of which 90 per cent. are successful. In 1910, when there was a serious epidemic in Möng Mit State, only one death was recorded.

Vital statistics. The general illiteracy of headmen makes it impossible to record statistics which would be of any value, and no attempt is made to do so.

Sanitation. Outside Mogök, Kyatpyin and Thabeikyin are the only villages in which a paid staff is employed for conservancy purposes. In the Palaung and Lishaw villages in the hills, in spite of constant exhortation, the sanitary conditions are deplorable, but thanks to the natural drainage provided by their situation and the comparatively low temperature, disaster is averted. In the riverine tracts the people are more amenable to instruction and a considerable improvement has been effected by the eviction of cattle from the villages. The fear of plague has also had good results in inducing the people to collect and destroy accumulations of rubbish.

There are Civil Hospitals at Mogök and Thabeitkyin, the former with 40 beds and the latter with 8. The daily average of in-door patients in 1913 was 30 and 6, respectively, and of out-door patients 79 and 13. In the rains there is often hardly a vacant bed. Public subscriptions provide various amenities and comforts for the patients, but the hospitals are maintained by provincial funds. An European ward has been provided at Mogök at the expense of the District Fund, and has been most useful. A new operation room is under construction. Small hospitals for the Military Police at Mogök, Thabeitkyin, Shwenyaungbin and Tagaung are each in charge of a Sub-Assistant Surgeon, who attends to any outside patients who require treatment.

CHAPTER XIV.

MINOR ARTICLES

Mogök, the headquarters of the district, is really a conglomeration of 12 villages which have been notified as a town for revenue purposes, but are administered under the Village Act. The area of the town is 2·68 square miles. The first settlements appear to have been at Uyin and Thapanbin. The Uyin villagers worked paddy in the valley, and as it was evening (*mo chök thi*) before they got home the cultivators established a village near their fields, and named the valley Mogök. The original settlement was Shanzu, now Shandaw. The development of mining led to the annexation of the Stone Tract in Bodawpaya's time and the administration was in the hands of the *so-thugyi* appointed by the King. Under that official were two *asiyinayis* or councillors who performed the practical work of Government, though in judicial matters they did not pass orders but submitted a report on which the *so-thugyi* passed judgment. Under each *asiyinayi* was an *ein-u-saye*, or chief clerk, who had no executive authority. Each separate village had its *thugyi* under the control of the *so-thugyi*, and in the centre of the group a "say-thugyi" exercised authority over the three quarters of Shandaw, Myoma and Alcywa. None of the officials had any regular pay. The villages were assessed at what they could be made to pay, and each grade of official added a little to the demand on his own account. When the *so-thugyi* had levied his own contribution the balance went to the Royal Treasury. During

the ten years that preceded the annexation the mines were managed direct on behalf of the King by an official from Mandalay, but the last two, U Waik, 1880—82, and Nga Si (afterwards the Mogoung *wun*) 1882—85, left the *so-thugyi* a free hand so long as their dues were paid. After the annexation the *myothugyi* appointed by the Deputy Commissioner at first exercised jurisdiction over the whole of the Mogök *so*, but from 1895-96 his authority was confined to Mogök Town, and in 1904 the post of *myothugyi* was abolished.

There were no private rights in land. The whole of the Stone Tract belonged to the King and the inhabitants had no better title than the *so-thugyi*'s permission to occupy.

The population of the 12 villages of Mogök at the census of 1911 was 11,069 but has recently (1914-15) been much reduced by emigration and the restriction of the Company's operations. The town has the usual administrative buildings and quarters for officials, the latter being somewhat scattered owing to the scarcity of house-sites. Most of the Government buildings are situated on the hill which dominates the Tonga road on the north-west. They include the District Court-house, the Forest Office, the Civil Police-station and the Post and Telegraph Offices. The Civil Hospital is at the foot of the hill, almost on the main road, and the bazaar stands on the slopes of Gyawtaung east of the road, and overlooking the recreation ground, which was reclaimed from the old Chaungzón mine when the Company extended its operations to the old and smaller ground close by. Above the bazaar is a storage tank for the water-supply of this part of the town, the main reservoirs being on the hill behind the Deputy Commissioner's quarters. The Military Police barracks occupy a secluded valley south-west of the latter hill, whence the road to Bernardmyo runs northward. The jail is situated on the Mainglón road near the junction of the Yebu and Onbin-yedwet *Chaungs*, and the combined stream is harnessed further south to provide electric power for the Ruby Mines Company. The Company's offices and workshops lie east of the Möng Mit road, which skirts the Shwebontha Mine on its way northwards towards Kyinitaung. The native cemeteries lie at the south-eastern corner of the town. The Christian cemetery is in the Military Police valley close to the Yebu road, and the church (built by Mr. A. H. Morgan, Manager of the Burma Ruby Mines Company) is close to the court-house. The Panthay mosque occupies a commanding position east of the bazaar, and the Shwe-

kugyi Pagoda dominates the valley on the north. A mosque and a Sikh temple have been built in the Military Police valley, and there are other places of worship in the town. Nearly every pagoda in Mogök was damaged by the severe earthquake of 1912.

The subdivision and township are conterminous and cover an area of 610 square miles, with a population (1911) of 26,381. The charge is bounded on the north and north-east by Möng Mit State, on the east and south by the Mainglôn Sub-state of Hsipaw, and on the west by the Thabeitkyin Township. The external boundaries have already been described in Chapter I. The western boundary of the township is as follows.*

Mogök
Subdivi-
sion.

From the Shwe-u-daung peak, the watershed between the Irrawaddy river and its tributaries on the west and the Kin stream and its tributaries on the east to the Myin-ka-daung peak; thence the Banbwe *taungdan* ridge to the Natpandaung peak; thence the watershed between the Natpan or Wabo stream on the west and the Thitsi stream on the east to its junction with the watershed between the Natpan or Wabo stream on the west and the Namsein Kam stream on the east; thence the latter watershed to the confluence of the Namsein Kam stream with the Natpan or Wabo stream; thence the stream formed by the junction of the Namsein Kam and Natpan or Wabo streams to its confluence with the Nampai stream.

The history of the subdivision has been the history of the Stone Tract with which it coincides, and has been recorded in Chapter II, and the bulk of its revenue has been derived from the mines.

Kathè seems to have been first settled from Thapanbin and was called "Myauk-ywa" in contra-distinction to Taungywa (Kyatpyin). In 1145 B.E. Bodawpaya sent 45 families of his Manipuri or Assamese† captives to work in the mines and they gave its present name to the village. Such is the local tradition.

Kathè is mentioned by name in the version of the Royal order of annexation (959 B.E.) recorded in a parabaik in the possession of ex-*so-thugyi* U Gaing of Kathè, though it does not occur in the "parabaik pyu" (page 27). It would seem probable that Kathè was only made into a separate *so* after the arrival of the captives. An inscribed silver scroll, which was unearthed from the site of an old pagoda

* Genl. Dept. Notification No. 184, dated the 10th June 1912.

† Probably the former, for Bodawpaya's expedition to Assam did not take place till 1816 (1177 B.E.). Phayre, page 228.

at Kathé in 1914 purports to have been buried there by the *so-thugyi* of Mogök, Samanta Raja (probably an honorific title) and is dated 1147 B.E. It is recorded that he held in his family the right of mining in Kathé, and that he paid annually for the privilege 450 rubies of 1 tical each and 500 of $\frac{1}{2}$ tical to the King. The Ruby Mines Company have recently completed a drainage cut to facilitate mining operations and the results of a year's work have been very satisfactory considering the state of the market.

Kyat-pyin. Though said locally to have been established in 1200 B.E., Kyatpyin is possibly identical with the "Caplan" of the early travellers*, and there was certainly a village or tract of that name in the tenth century of the Burmese era.

The Burmese name is said to be derived from the fact that the people slept on platforms, with fires underneath to keep them warm at night. Kyatpyin was for some time the centre of the Company's operations, when the deposits in Pingutaung were being worked out. It has a piped water-supply, a police-station and a five-day bazaar. The ridge behind the village is the highest point of the Tonga road, and the valley receives a very much heavier rainfall than Mogök, eight miles away.

Thabeitkyin Sub-division. Thabeitkyin Subdivision consists of two townships, Thabeitkyin and Tagaung, with headquarters corresponding. The boundary between it and Mogök has been described above. Between the two townships the boundary is as follows:—†

From its source near the Zindaung peak in the Minwun range, the Gonga stream to its junction with the Irrawaddy river; thence a line across the Irrawaddy river skirting the northern extremity of the Tadaunggya island to the junction of the Tadaunggya stream with the Irrawaddy river, thence the Tadaunggya stream to its source in the Thaung-bwet *taung* peak; thence the watershed between the Taunggya Gyi and Namsein streams on the south and the Thantada stream on the north to the boundary between the Ruby Mines District and the State of Möng Mit at the south-west corner of the Tauktakuggyi Forest Reserve.

The Thabeitkyin Township has an area of 688 square miles and a population (1911) of 10,238.

Thabeitkyin. Thabeitkyin village, the headquarters (population 1,451) owes its importance to its position at the river end of the

* Fytche, page 172.

†(General Department Notification No. 183, dated the 10th June 1912.)

Tonga road. In Burmese times it was an insignificant fishing village, part of the Theingadaw *myothugyi* ship, and was dedicated with the rest of that charge to the upkeep of the Theingadaw* Pagoda.

The road winds round the bluff on which stand the court-house, the police-station and the hospital. At the foot of the hill are the offices of the motor companies and the various forwarding agents, and on the other side of the road the *dâk* bungalow and the Military Police lines.

Kyahnyat (population 543) was in Burmese times the Kyah-nyat headquarters of the *myothugyi* ship of that name, and subsequently of a subdivision after the annexation. As an administrative centre it has been superseded by Tagaung, and as the river base for the Ruby Mines by Thabeitkyin, but though it no longer affords a good landing place for steamers it still does a considerable trade with Möng Mit in such commodities as are suited to transport by carts, mules or country boats.

The headquarters first of the subdivision and then of the township were transferred from Kyahnyat to Tagaung in 1894. The area of the present township is 618 square miles and its population 10,785. Its fisheries, formed by the Irrawaddy floods, are administered by the Deputy Commissioner, Katha, and the receding waters leave considerable areas available for *mayin* cultivation. Inywa, at the mouth of the Shweli, and Myadaung are the chief centres of the timber trade.

According to the Burmese chronicles Tagaung was the first city to be founded by the Kshatriya princes who came to Burma from Northern India, and Yule identifies it with the "Tugma metropolis" of Ptolemy†.

The foundation of the city by Abhi Raja is ascribed by the chronicles to a period long before the birth of Buddha‡, and the dynasty, on the same authority, was continued by thirty-one of his descendants, was overthrown by invaders from the east, and replaced by that of Daza Raja, who founded the city of old Pagan near Tagaung. Sixteen kings succeeded him, and the last representative established himself at Prome about (according to the chronicles) 483 B. C. Phayre § identifies the invaders from the east with the Shans, and would post-date these events by several

Tagaung
Town-
ship.

* Thihadaw, founded 1816 A.D. Phayre, page 230. Yule, page 78.

† Yule, page 205.

‡ Phayre, page 7.

§ Phayre, page 14.

centuries. The ruins of Tagaung afford evidence of its origin, and the inscriptions and bricks are considered to establish its claim to be the earliest seat of the Indo-Burmese Monarchy.

It may be added that local tradition ascribes a greater antiquity to Tonne than to Tagaung, and asserts that Mahā Rājā, the first king, built a temporary palace there. It is possible that Ptolemy's "Tugma" was Tonne, and not Tagaung.

APPENDIX.

Chronological list of Deputy Commissioners of the Ruby Mines District.

Name.	Was Deputy Commissioner		Remarks.
	From	To	
Mr. G. M. S. Carter	... December 1886.	...	
Mr. T. F. Fforde	... 22nd Aug. 1887.	30th April 1888.	
Mr. A. R. Colquhoun	... 30th April 1888.	8th July 1889.	
Lieut. H. A. Browning	... 9th July 1889.	19th July 1890.	
Mr. C. E. Daniell	... 19th July 1890.	17th Nov. 1890.	
Lieut. H. A. Browning	... 17th Nov. 1890.	16th May 1891.	
Capt. L. E. Elliott	... 16th May 1891.	18th Nov. 1891.	
Mr. N. G. Cholmeley, C.S.I.	... 18th Nov. 1891.	18th June 1895.	
Mr. C. E. Daniell	... 18th June 1895.	29th Oct. 1896.	
Mr. J. D. Fraser	... 29th Oct. 1896.	4th Dec. 1896.	
Mr. A. S. Fleming	... 4th Dec. 1896.	23rd March 1899.	
Capt. W. R. Stone	... 23rd March 1899.	20th May 1899.	
Mr. A. Ross	... 20th May 1899.	25th Oct. 1899.	
Mr. A. S. Fleming	... 25th Oct. 1899.	6th March 1900.	
Capt. L. E. Elliott	... 6th March 1900.	23rd Oct. 1900.	
Mr. C. C. T. Chapman	... 23rd Oct. 1900.	20th Jany. 1902.	
Mr. D. H. R. Twomey	... 20th Jany. 1902.	21st May 1903.	
Mr. B. S. Carey, C.S.I., C.I.E.	... 21st May 1903.	12th July 1904.	
Mr. E. C. S. George, C.I.E.	... 13th July 1904.	15th March 1912.	
Mr. A. A. Cameron	... { 1st Dec. 1910. 16th March 1912.	17th Jany. 1911.	
		26th April 1912.	

Ruby Mines District.

*Chronological list of Deputy Commissioners of the Ruby
Mines District—concl'd.*

Name,	Was Deputy Commis- sioner		Remarks.
	From	To	
Mr. E. J. Colston	26th April 1912.	24th March 1913.	
Mr. C. E. Hill	24th March 1913.	31st March 1913.	
	20th Nov. 1913.	4th Dec. 1913.	
Capt. L. E. L. Burne	9th April 1913.	20th Nov. 1913.	
Mr. G. W. Dawson	5th Dec. 1913.	...	

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Printed (Provincial) and Manuscript (District) Reports:—

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Land Revenue.	Civil Hospitals.
Season and Crop.	District Funds.
Criminal and Civil Justice.	Village Administration.
Police.	Public Works Administration.
Registration.	Excise Administration.
Frontier Trade.	Public Instruction.

OFFICE FILES.*

Number and Year.	Subject.
Main File 2T.-2	Changes in subdivisional and township boundaries.
Main File 2T.-1-B	Notifications relating to formation of district.
Genl. Progs. 4D of 1909	Boundary between Ruby Mines District and Möng Mit.
Genl. Progs. 111D of 1910	Boundary between Mogök and Thabeikkyin Townships.
Main File 2A.-29 (a)&(b)	Old history of Ruby Mines District and Möng Mit.
Main File District Guide I.	(Includes) Reports on district fisheries, notes on tourmaline mines and old papers in connection with the Burma Ruby Mines Company.
Rev. Progs. 3.—IV of 1904-05.	Fishing weir on Nampe <i>chaung</i> .
Genl. Progs. 4-S. of 1908 Main File 6P.-4.	Irrigation weirs and floating logs.
Main File VII-9	Rubies and sapphires.
Main File VII-5	History of the Burma Ruby Mines Company.
Main File VII-6	Extension of Ruby Mines Company's lease.
Main File VII-2	Mines and minerals.
Rev. Progs. 101—V of 1910-11.	Foundation of <i>htawain</i> or ruby market at Gyawtaung.
Rev. Progs. 33—I of 1903-04.	Acquisition of ground for extension of Company's operations, eviction of squatters, restrictions of lists of hereditary miners.
File I-9 of 1914-15	Do.
File VII-5 of 1904-05	Heredity miners.

* Owing to the destruction of all records in the fire of 1899 a large number of the earlier papers are grouped together in permanent files.

Number and Year.	Subject.
Files 1S.-1 and 1S.-3 of 1910	Method of calculating for the famine analysis of the district.
Main File XIV-6 ...	Crop cutting.
File I-12 of 1906-07 ...	Assimilation of assessment of land revenue on State and non-State lands.
Rev. Progs. 245—III of 1907-08.	Proposed reduction of <i>thatthameda</i> rate.
File I-8, 1907-08 ...	Communal tenures—Thabeitkyin Sub-division.
Main File I-14, Revenue Progs. 117—I of 1909-10.	“ <i>Bobabaing</i> ” lands—Thabeitkyin Subdivision.
Main File I-15 ...	Tenures in Stone Tract.
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Main File III-4 ...	Collection of <i>thatthameda</i> from firms and companies.
Main File 2V.-II ...	Village headmen's jurisdictions.
Misc. Village Progs. 38 of 1905.	Town lands, Definition of boundaries, Mogök Town, and delimitation of village jurisdictions.
Misc. Village Progs. 57 of 1904 and 1 of 1905.	Sites for cemeteries, Mogök.
Miscellaneous General Progs. 55 of 1905.	Site for family lines, Military Police.

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Village Inspection Books.

Headmen's Registers.

Deputy Commissioner's diaries.

Deputy Commissioner's notes on each subdivision.

* The village Inspection Books contain a mass of information regarding tenures and the happenings of Burmese times.

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